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**Planning Department**

Fanling, Sheung Shui & Yuen Long East
District Planning Office
Unit 2202, 22/F, CDW Building,
388 Castle Peak Road, Tsuen Wan, N.T.

來函檔號 Your Reference : S3114/YPR_LPH/23/009Lg
本署檔號 Our Reference : () in TPB/A/YL-MP/341
電話號碼 Tel. No. : 3168 4037 / 3168 4072
傳真機號碼 Fax No. : 3168 4074 / 3168 4045

7 October 2024

Dear Madam,

**Compliance with Approval Condition (i)
Submission of the Noise Mitigation Plan**

**Proposed Temporary Light Public Housing Development for a Period of 3 Years and
Associated Filling and Excavation of Land in "Recreation" and "Residential (Group C)"
Zones, Various Lots in D.D. 104 and Adjoining Government Land,
Yau Pok Road, Mai Po, Yuen Long**
(Planning Application No. A/YL-MP/341)

I refer to your submission dated 19.9.2024 for compliance with the captioned approval condition. The relevant department has been consulted on your submission. Your submission is considered:

- Acceptable. The captioned condition has been complied with.
- Acceptable. Since the captioned condition requires both the submission and implementation of the proposal, it has not been fully complied with. Please proceed to implement the accepted proposal for full compliance with the approval condition.
- Not acceptable. The captioned condition has not been complied with.

- 2 -

Should you have any queries regarding the departmental comments on the submission, please contact Ms. Jolitta CHAN (Tel: 2835 1112) of Environmental Protection Department directly. If you have any queries regarding this planning permission, please contact Mr. Louis CHEUNG of this Office at 3168 4037.

Yours sincerely,



(Josephine LO)
District Planning Officer/
Fanling, Sheung Shui and Yuen Long East
Planning Department

c.c.

ArchSD

(Attn: Ms. Mandy LAM)

(Fax: 2530 3087)

DEP

(Attn: Ms. Jolitta CHAN)

(Fax: 2591 0558)

CTP/TPB(3)

JL/lc

By Email

Our Ref: S3114/YPR_LPH/23/003Lg

29 February 2024

Fanling, Sheung Shui &
Yuen Long East District Planning Office
Planning Department
Unit 2202
22/F CDW Building
388 Castle Peak Road
Tsuen Wan, N.T..

Attn: Mr Gary Lam

Dear Gary,

**S16A(2) Application for Amendment to Permission
Approved Temporary Light Public Housing Development For a Period of 3 Years
at Various Lots in DD 104 and the Adjoining Government Land,
Yau Pok Road, Yuen Long
TPB Ref.: A/YL-MP/341
- Discharge of Approval Condition (i) -**

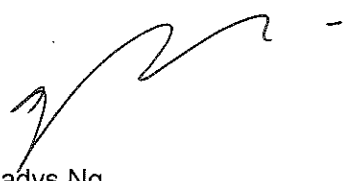
Reference is made to the S16 Planning Application approved by the Town Planning Board on 9 June 2023. We hereby submit information to facilitate compliance with the following Planning Approval Condition:

(i) – *“the submission of the noise mitigation plan within 9 months from the date of planning approval to the satisfaction of the Director of Environmental Protection or of the TPB by 9.3.2024”*

Meanwhile, should you have any queries in relation to the attached, please do not hesitate to contact Mr Kenneth To or the undersigned at [REDACTED]

Thank you for your kind attention.

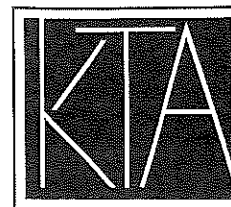
Yours faithfully
For and on behalf of
KTA PLANNING LIMITED


Gladys Ng

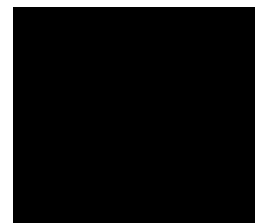
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cc. the Applicant & Team

KT/GN/vy



PLANNING LIMITED
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FS 579819



By Email

Our Ref: S3114/YPR_LPH/23/004Lg

5 April 2024

Fanling, Sheung Shui &
Yuen Long East District Planning Office
Planning Department
Unit 2202
22/F CDW Building
388 Castle Peak Road
Tsuen Wan, N.T..

Attn: Mr Gary Lam

Dear Gary,

**S16A(2) Application for Amendment to Permission
Approved Temporary Light Public Housing Development For a Period of 3 Years
at Various Lots in DD 104 and the Adjoining Government Land,
Yau Pok Road, Yuen Long
TPB Ref.: A/YL-MP/341
- Discharge of Approval Condition (i) -**

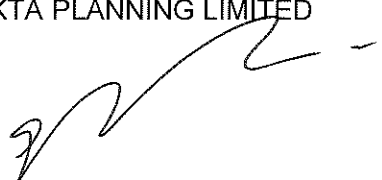
Reference is made to the S16 Planning Application approved by the Town Planning Board on 9 June 2023, submission of Noise Impact Assessment on 29 February 2024 and comments received from the Environmental Protection Department on 8 March 2024.

In response to the comments received, we hereby submit a Response-to-Comment Table and a revised Noise Impact Assessment for the consideration by the Environmental Protection Department.

Meanwhile, should you have any queries in relation to the attached, please do not hesitate to contact Mr Kenneth To or the undersigned at [REDACTED]

Thank you for your kind attention.

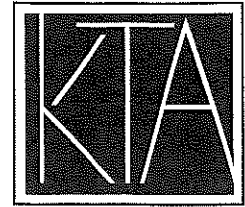
Yours faithfully
For and on behalf of
KTA PLANNING LIMITED


Gladys Ng

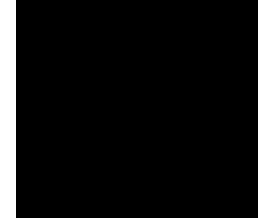
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cc. the Applicant & Team

KT/GN/vy



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FS 579819

By Email

Our Ref: S3114/YPR_LPH/23/008Lg

19 August 2024

Fanling, Sheung Shui &
Yuen Long East District Planning Office
Planning Department
Unit 2202
22/F CDW Building
388 Castle Peak Road
Tsuen Wan, N.T..

Attn: Ms Jane Lau

Dear Jane,

**S16A(2) Application for Amendment to Permission
Approved Temporary Light Public Housing Development For a Period of 3 Years
at Various Lots in DD 104 and the Adjoining Government Land,
Yau Pok Road, Yuen Long
TPB Ref.: A/YL-MP/341
- Discharge of Approval Condition (i) -**


Reference is made to the S16 Planning Application approved by the Town Planning Board on 9 June 2023, submission of Noise Impact Assessment on 5 April 2024 and comments received from the Environmental Protection Department on 22 May 2024.

In response to the comments received, we hereby submit a Response-to-Comment Table and a revised Noise Impact Assessment for the consideration by the Environmental Protection Department.

Meanwhile, should you have any queries in relation to the attached, please do not hesitate to contact Mr Kenneth To or the undersigned at [REDACTED].

Thank you for your kind attention.

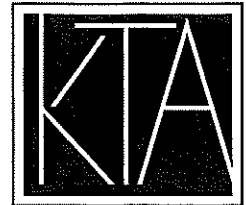
Yours faithfully
For and on behalf of
KTA PLANNING LIMITED


Gladys Ng

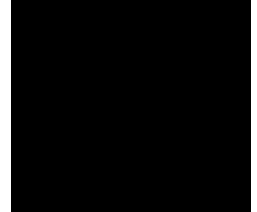
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cc. the Applicant & Team

KT/GN/vy



PLANNING LIMITED
規劃顧問有限公司



FS 579819

By Email

Our Ref: S3114/YPR_LPH/23/009Lg

19 September 2024

Fanling, Sheung Shui &
Yuen Long East District Planning Office
Planning Department
Unit 2202
22/F CDW Building
388 Castle Peak Road
Tsuen Wan, N.T..

Attn: Ms Jane Lau

Dear Jane,

**S16A(2) Application for Amendment to Permission
Approved Temporary Light Public Housing Development For a Period of 3 Years
at Various Lots in DD 104 and the Adjoining Government Land,
Yau Pok Road, Yuen Long
TPB Ref.: A/YL-MP/341
- Discharge of Approval Condition (i) -**

Reference is made to the S16 Planning Application approved by the Town Planning Board on 9 June 2023, submission of revised Noise Impact Assessment on 19 August 2024 and comments received from the Environmental Protection Department via your goodself on 5 September 2024.

In response to the comments received, we hereby submit a revised Noise Impact Assessment, which has incorporated the endorsement of traffic forecast data by the Transport Department, for the consideration by the Environmental Protection Department.

Meanwhile, should you have any queries in relation to the attached, please do not hesitate to contact Mr Kenneth To or the undersigned at [REDACTED].

Thank you for your kind attention.

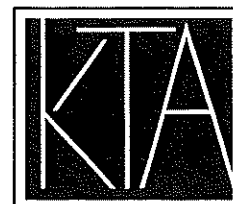
Yours faithfully
For and on behalf of
KTA PLANNING LIMITED


Gladys Ng

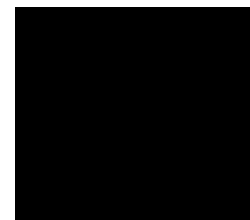
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cc. the Applicant & Team

KT/GN/vy



PLANNING LIMITED
規劃顧問有限公司



FS 579819



Prepared by
Ramboll Hong Kong Limited

DESIGN AND CONSTRUCTION OF LIGHT PUBLIC
HOUSING AT YAU POK ROAD, YUEN LONG

NOISE IMPACT ASSESSMENT

Date September 2024
Prepared by Gary Yuen
Environmental Consultant



Signed

Approved by Steve Lo
Principal Consultant



Signed

Project Reference CHEM518-ED00
Document No. R9343_v1.3

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1. INTRODUCTION

1.1 Background

1.1.1 The Applicant is responsible for the design and construction of the Light Public Housing (hereafter as “LPH”) Development on a 3-year temporary basis (hereafter as “Proposed Development”), located at Yau Pok Road, Yuen Long (hereafter as “the Application Site”).

1.1.2 Ramboll Hong Kong Limited is commissioned to prepare this Noise Impact Assessment (NIA) for the Indicative Scheme at the Application Site. This NIA report has been prepared with respect to the latest Master Layout Plan, which is provided by the Project Architect.

1.2 Development Site

1.2.1 The Application Site has an area of approximately 89,774 m², bounded by Yau Pok Road to the east, Fairview Park to the west and north, farmland to the north-east, and Fairview Park Boulevard to the south. The entire site is under the approved Mai Po and Fairview Park Outline Zoning Plan No. S/YL-MP/6 (the OZP), comprising mainly “Recreation” (REC) zone and a small portion of “Residential (Group C)” (“R(C)”) zone. TPB has issued planning permission on temporary use of the 3-year-basis LPH development, with the support of an approved Environmental Assessment (EA) regarding the corresponding planning application (A/YL-MP/341) under Section 16 (S16) of Town Planning Ordinance (TPO) for this LPH Development.

1.2.2 Figure 1.1 shows the location of the Application Site and its environs.

1.3 Proposed Development

1.3.1 The LPH Development will comprise the following:

- Ten (10) 3-storey domestic blocks adopting Modular Integrated Construction (MiC) with total 2161 domestic units;
- Ancillary facilities including retail, community facilities, offices/guard rooms, store rooms, function rooms, plant rooms, one (1) sewage pumping station (SPS), two (2) Refuse Collection Points and two (2) termini for public transport;
- External leisure space including landscaped areas and children’s playgrounds; and
- Provision of landscaping features which shall help to minimize any adverse visual impact.

1.3.2 The Master Layout Plan (MLP) are provided in Appendix 1.1.

1.3.3 The construction works has been commenced in December 2023 and start occupation once construction completed. The Development is currently planned to operate for five years until 2030.

1.3.4 Development parameters of residential development are summarised in Table 1.1 below.

Table 1.1 Development Parameters

| Zone | Zone 1 (northern part of the site) | Zone 2 (southern part of the site) |
|--------------------------------------|------------------------------------|------------------------------------|
| No. of Building | 6, Block 1 - 6 | 4, Block 7 – 10 |
| Ground Floor Level, mPD | 4 | 6 |
| Floors | G/F – 2/F | G/F – 2/F |
| No. of Typical Floors | 3 | 3 |
| Residential Floor Height, m | 2.9 | 2.9 |
| Lowest Residential Floor Level, mPD | 4.65 (G/F) | 6.65 (G/F) |
| Top Level of Residential Floors, mPD | 10.45 (2/F) | 12.45 (2/F) |
| No. of Units | 1120 | 1041 |

2. TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Assessment Criteria

2.1.1 Noise standards are recommended in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against noise impact from sources such as road traffic, railway and aircraft etc. According to the guidelines, the road traffic noise planning standard, assessed in terms of $L_{10}(1 \text{ hr.})$ for the hours having the peak traffic flow, at the external facades of domestic premises, i.e. residential flats, is 70 dB(A). The standard applies to noise sensitive uses that rely on opened window for ventilation.

2.2 Assessment Methodology

2.2.1 The methodology involved the prediction of noise impacts on noise sensitive receivers (NSRs) arising from traffic flows on road carriageways situated in the vicinity of the Development Site.

2.2.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was used to predict the hourly L_{10} noise levels generated from road traffic at selected NSRs. The predicted noise levels were then compared with the relevant HKPSG noise standards. Noise mitigation measures are recommended at areas when unacceptable noise impacts are predicted.

2.2.3 The assessment concerns the prediction of the maximum hourly L_{10} traffic noise level at NSRs of the proposed development due to the projected traffic flow on the adjacent major road networks. The L_{10} traffic noise level was predicted at representative NSRs under am and pm peak traffic hours as worst-case scenario. In view of targeted population intake of Year 2025, the potential traffic noise impact was evaluated with respect to Year 2040, i.e. the year with maximum traffic within 15 year on population intake.

2.2.4 Traffic flow was predicted by the project traffic consultant – CKM Asia Limited. The information on traffic volume and percentage of heavy vehicle using these roads was attached in Appendix 2.1. Endorsement from Transport Department on the traffic forecast methodology are pending and will be provided in due course.

2.3 Noise Sensitive Receivers

2.3.1 The residential dwellings will be provided with openable windows for prescribed ventilation purposes. They are selected as NSRs for noise impact assessments. The assessment points are taken to be situated at 1.2m above floor slabs and at 1m away from the external facade of openable windows of the noise sensitive rooms of the residential units.

2.3.2 Other noise sensitive rooms of clubhouse and retail will be provided with centralized ventilation such that they would not rely on opened window for ventilation. No adverse noise impact is envisaged.

2.3.3 Noise assessment point locations are indicated in Figure 2.1 to Figure 2.3.

2.4 Assessment Results and Discussion

2.4.1 The modelled results under base case scenarios at the representative NSRs are shown in Appendix 2.2.

2.4.2 According to the results, amongst 2161 flat units, the maximum predicted noise levels is 69 dB(A). The compliance rate is 100% for the Base Case Scenario.

2.5 Conclusion

- 2.5.1 The assessment results indicated that the HKPSG road traffic noise standard can be met at all NSRs under worst case scenario with proposed building design. No adverse traffic noise impact is anticipated with proposed development.

3. FIXED NOISE SOURCE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 In this assessment, potential noise impacts arising from nearby fixed noise source on the proposed development has been assessed by general acoustic principle and Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM). Practicable environmental mitigation measures would be recommended, where necessary.

3.2 Assessment Criteria

3.2.1 The Application Site is located in an area contains mainly low-rise residential developments, with some government, institution and community (GIC) uses and industrial operations in the surroundings. The type of the area where the NSRs located should be classified as "Rural area, including country parks or village type developments". The NSRs at the proposed development are not affected by influencing factor (IF). Therefore, the Area Sensitivity Ratings (ASRs) of "A" is considered.

3.2.2 According to the IND-TM, the ANLs in Leq (30min) dB(A) regarding the ASRs for both daytime and night-time are shown in Table 3.1 as below.

Table 3.1 Acceptable Noise Levels (ANLs) at NSRs of the Development

| Time Period | ANL for ASR "A", Leq (30min), dB(A) |
|------------------------------------|-------------------------------------|
| Day & Evening (0700 to 2300 hours) | 60 |
| Night (2300 to 0700 hours) | 50 |

3.3 Fixed Noise Sources in the vicinity of the Application Site

3.3.1 A number of fixed noise sources were identified in the approved EIA report in support of the corresponding Planning Application (Y/YL-MP/341). Desktop study and site visits have been carried out in June 2023 and January 2024 to update the identified fixed noise sources and identify any new potential fixed noise sources within the 300m assessment area. Details of all the identified fixed noise sources are summarized in Table 3.2 and their locations are shown in Figure 3.1.

3.3.2 Site photos are provided in Appendix 3.1.

Existing Chuk Yuen Stormwater Pumping Station (NS01)

3.3.3 The existing Chuk Yuen Stormwater Pumping Station is located to the east of the Application Site across the Ngau Tam Mei Drainage Channel and Kam Pok Road. During the recent site survey, no noticeable noise was observed at the pumping station. As such, fixed noise impact from the existing Chuk Yuen Stormwater Pumping Station is not anticipated and this noise source has been excluded from the assessment.

Open Storage Site with associated Warehouse (Fan Keung Kee) (NS02)

3.3.4 The concerned site is used for storage of construction materials. There is a warehouse within the storage site and it is sheltered on 3 sides and the top. Noise sources from the site include the operating noise, loading and unloading using forklift, movement of lorry and the use of mobile crane. Site photos taken during recent site survey are provided in Appendix 3.1.

Totally Enclosed Godown (NS03)

- 3.3.5 The godown is a totally enclosed structure as shown in site photo provided in Appendix 3.1. Noise sources from the godown include the loading and unloading using forklift and movement of lorry.

Kam Wing Car Service (NS04)

- 3.3.6 The vehicle service workshop is sheltered on 3 sides and the top with opening facing Fairview Park Boulevard. The workshop is also partially shielded by the adjacent building façade. The major noise source from the vehicle service workshop is the use of pneumatic screwdriver. Site photo taken during recent site survey are provided in Appendix 3.1.

Sun Chun Car Shop, Akina Auto Centre and Sun Hing Car Service (NS05, NS06 and NS08)

- 3.3.7 The vehicle service workshop is sheltered on 3 sides and the top with opening facing Fairview Park Boulevard. The major noise source from the vehicle service workshop is the use of pneumatic screwdriver. Site photo taken during recent site survey are provided in Appendix 3.1.

Chin Hung Car Service (NS07)

- 3.3.8 The business of this vehicle service workshop is found to be terminated. Site photo taken during recent site survey are provided in Appendix 3.1. To present the worst-case scenario, this fixed noise sources is remained to be included in the assessment and corresponding SWL from the approved EIA report is referenced.

Petrol Filling Station within Fairview Park (NS09)

- 3.3.9 There is a small petrol filling station within Fairview Park to the south of the Project Site. As the petrol filling station is within Fairview Park (a private development) and is separated from other public roads by an existing vehicular entrance/ security gate, the main users of the station are the residents of Fairview Park (e.g. using private vehicles) and heavy vehicles serving the commercial centre at Fairview Park. Since Fairview Park is a residential estate and the commercial centre is surrounded by residential houses, visits of heavy vehicles during night-time period after 11pm is unlikely. To be conservative, noise impact due to movement of heavy vehicles has been taken into account in the fixed noise impact assessment. The petrol filling station does not provide any vehicle repairing services, and the movement of vehicles in and out of the station and refilling of underground storage tank by oil tanker are the only noise sources during its operation. According to site observation in January 2024, vehicles entering and leaving the petrol filling station would travel in slow speed due to the small size of the petrol filling station. Thus, the noise generated due to movement of vehicles within the station is not significant due to the slow motion of vehicle movement. According to the approved EIA Report (AEIAR-182/2014), refilling of underground storage tank by oil tanker will only be arranged during daytime (usually from 10am to 1pm) in order to avoid potential noise impact due to the close proximity of nearby existing residential houses within Fairview Park. As per the approved EIA Report, the refilling of underground storage tank itself does not generate noise impact as no mechanical movement of equipment is involved in the refilling process. Instead, movement of the oil tanker within the petrol filling station will be noise source, which has been taken into account in the daytime fixed noise impact assessment.

3.3.10 Noise measurement of petrol filling station at Fairview Park was conducted at the planned NSR (FNSR3) on two normal weekdays on 26 June and 27 June 2023. Details of noise measurement are listed as follows:

- Fixed Noise Source: Vehicle movement within the petrol filling station at Fairview Park
- Noise Measurement Period: 26 June 2023 11pm to 1am and 27 June 2023 5am to 7am
- Noise Measurement Parameter: L_{eq} (30mins)
- Measurement Height: 1.2m above ground

3.3.11 The noise measurement data and site photos taken on 26 and 27 June 2023 were provided in Appendix 3.4. Based on the noise measurement data, the maximum sound pressure level (SPL) measured at representative noise sensitive receiver FNSR3 due to the movement of vehicles within petrol filling station during night-time (i.e. 45.8 dB(A) with the inclusion of 3 dB(A) façade correction) which show compliance of Noise Control Ordinance of 50 dB(A) noise criteria during night-time.

3.3.12 Site photo taken during recent site survey is provided in Appendix 3.1.

Table 3.2 Potential Fixed Noise Sources in the vicinity of the Application Site

| ID | Description | Type/Identified Activity | Operational Information | Remarks |
|------|---|-----------------------------------|-------------------------|--|
| NS01 | Existing Chuk Yuen Stormwater Pumping Station | Pumping Station | 24 hours | <ul style="list-style-type: none"> Fixed noise is mitigated by the building enclosure and no noticeable noise was observed during recent site survey Excluded from the assessment |
| NS02 | Open Storage Site with associated Warehouse (Fan Keung Kee) | Storage of construction materials | Daytime/ Nighttime | <ul style="list-style-type: none"> The warehouse is sheltered on 3 sides and the top Noise sources include the operating noise, loading and unloading using forklift, movement of lorry and the use of mobile crane |
| NS03 | Totally Enclosed Godown | Storage of construction materials | Daytime/ Nighttime | <ul style="list-style-type: none"> The godown is a totally enclosed structure Noise sources include the loading and unloading using forklift and movement of lorry |
| NS04 | Kiddo Auto | Vehicle Service Workshop | Daytime | <ul style="list-style-type: none"> The workshop is sheltered on 3 sides and the top with opening facing Fairview Park Boulevard The working shop is also partially shielded by the adjacent building façade Noise is generated from the use of pneumatic screwdriver |
| NS05 | Sun Chun Car Shop | | | <ul style="list-style-type: none"> The workshop is sheltered on 3 sides and the top with opening facing Fairview Park Boulevard |
| NS06 | Akina Auto Centre | | | <ul style="list-style-type: none"> Noise is generated from the use of pneumatic screwdriver |
| NS08 | Sun Hing Car Service | | | <ul style="list-style-type: none"> Business found to be terminated |
| NS07 | Chin Hung Car Service* | | | <ul style="list-style-type: none"> Business found to be terminated |
| NS09 | Petrol Filling Station within Fairview Park | Petrol Filling Station | Daytime/ Nighttime | <ul style="list-style-type: none"> No vehicle repairing services Movement of vehicles in and out of the station and refilling of underground storage tank by oil tanker are the only noise sources during its operation Refilling of underground storage tank by oil tanker will only be arranged during daytime (usually from 10am to 1pm) and the refilling process does not generate noise impact as no mechanical movement of equipment is involved |

*: Business is found to be terminated. To present the worst-case scenario, this fixed noise sources is remained to be included in the assessment and corresponding SWL from the approved EIA report is referenced.

3.4 Fixed Noise Sources within the Application Site

3.4.1 One sewage Pumping Station (SPS) would be built for the proposed LPH development and it is considered as the potential fixed noise source during the operation of the Project. Location of the proposed SPS is shown in Figure 3.1.

3.5 Identification of Noise Sensitive Receivers

3.5.1 Existing and planned noise sensitive receivers (NSRs) within 300m assessment area have been identified based on the topographic maps supplemented by site surveys, OZPs and other published plans in the vicinity of the Application Site. The NSRs have made reference to those presented in the Fixed Noise Impact Assessment in the approved EIA report.

3.5.2 Details of the identified representative NSRs are summarised in Table 3.3 and their locations are shown in Figure 3.2.

Table 3.3 Representative Noise Sensitive Receivers

| NSR ID | Description | Uses | Existing/ Planned | Approximate Horizontal Distance from the Nearest Site Boundary (m) |
|--------|---|----------------------------|----------------------|--|
| N01 | Yau Mei San Tsuen | Residential | Existing | 224 |
| N02 | Fairview Park | Residential | Existing | 9 |
| N03 | Fairview Park | Residential | Existing | 13 |
| N04 | Fairview Park | Residential | Existing | 12 |
| N05 | Fairview Park | Residential | Existing | 13 |
| N06 | Fairview Park | Residential | Existing | 13 |
| N07 | Fairview Park | Residential | Existing | 15 |
| N08 | Fairview Park | Residential | Existing | 13 |
| N09 | Bethel High School | Educational Institution | Existing | 16 |
| N10 | Fairview Park | Residential | Existing | 12 |
| N11 | Fairview Park | Residential | Existing | 16 |
| N12 | Fairview Park | Residential | Existing | 32 |
| N13 | Hong Kong and Macau Lutheran Church Wong Chan Sook Ying Memorial School | Educational Institution | Existing | 96 |
| N14 | Man Yuen Chuen | Residential | Existing | 149 |
| N15 | Helene Terrace | Residential | Existing | 127 |
| N16 | Village House at Ha San Wai Road | Residential | Existing | 176 |
| N17 | Chuk Yuen Tsuen | Residential | Existing | 257 |
| N18 | Chuk Yuen Tsuen | Residential | Existing | 223 |
| N1P | Planned Yau Mei Site | Residential | Planned | 12 |
| N2P | Planned Kam Pok Road Site | Residential | Planned | 73 |
| N3P | Planned Kam Pok Road Site | Residential | Planned | 84 |
| N4P | Planned R(D) Site | Residential | Planned | 74 |
| N5P | Planned R(D) Site | Residential | Planned | 108 |

3.6 Assessment Approach and Methodology

3.6.1 The ambient noise of the Project area is mainly from road traffic noise along Yau Pok Road, Kam Pok Road and Fairview Park Boulevard. A background noise measurement was conducted in August 2024 to obtain the prevailing noise levels. The measured prevailing noise levels are detailed in Table 3.4 with the measurement location illustrated in Figure 3.3. Full details of the measurement are embedded in Appendix 3.5.

Table 3.4 Prevailing Noise Levels

| Noise Measurement Point | Measurement Location | Prevailing Noise Level, L_{90} (1-hr), dB(A) | | |
|-------------------------|----------------------|--|-----------------------|---------------------|
| | | Day (0700 – 1900) | Evening (1900 – 2300) | Night (2300 – 0700) |
| BNM1 | Application Site | 50.8 | 51 | 49.2 |

Note: Free-field measurement was made at the measurement location. A correction of +3 dB(A) was applied in the results.

- 3.6.2 Considering the ANLs of the NSRs and the background noise measurement results, the fixed noise criteria adopted for the prediction of maximum permissible sound power level (SWL) of the proposed SPS are presented in Table 3.5 below.

Table 3.5 Fixed Noise Criteria for Prediction of Maximum Permissible SWL

| NSR ID | ANL-5, dB(A) | | Background Noise Measurement Location | Prevailing Noise Level, L_{90} (1-hr), dB(A) | | Fixed Noise Criteria, dB(A) | |
|--------------|---------------|-------|---------------------------------------|--|-------|-----------------------------|-------|
| | Day / Evening | Night | | Day / Evening | Night | Day / Evening | Night |
| NSR7 NSR8 | 55 | 45 | BNM1 | 51 | 49 | 51 | 45 |

- 3.6.3 In any event, the noise limits adopted in this report is for an indicative operational noise assessment only. It should be noted that fixed noise sources are controlled under Section 13 of the Noise Control Ordinance (NCO). At the time of investigation, the Noise Control Authority shall determine noise impact from concerned fixed noise sources on the basis of prevailing legislation and practices being in force, and taking into account of contemporary conditions/situations of adjoining land uses. Nothing in this report shall bind the Noise Control Authority in the context of law enforcement against any fixed noise source being assessed.
- 3.6.4 The fixed noise impact assessment has been conducted based on standard acoustic principles and followed the procedures outlined in the IND-TM.
- 3.6.5 Since no major change in the operation of existing fixed noise sources in recent visit in January 2024, the noise levels from operation of existing fixed noise sources are made reference to noise data adopted in the previous EA Report in support of Planning Application No. Y/YL-MP/341. Cumulative fixed noise impact arising from existing and planned fixed noise sources located within 300m assessment area at the representative planned NSRs is assessed.
- 3.7 Prediction of Maximum Permissible Sound Power Level for the Proposed Sewage Pumping Station
- 3.7.1 As the E&M equipment details are subject to detailed design at later stage, the maximum permissible SWL for all openings and louvres of the proposed SPS will be determined to ensure compliance with statutory requirements and guidelines. It is assumed that all fixed noise sources of the proposed SPS would be operated at the same time for 24 hours with no noise barrier or acoustic screening correction for a conservative assessment of the worst-case scenario.
- 3.7.2 The E&M equipment housed inside the proposed SPS should be free of the characteristics of tonality, impulsiveness and intermittency. Nonetheless, a +3 dB(A) tonality correction was applied in the assessment as a conservative approach. If the above characteristics are identified during detailed design stage, the maximum permissible SWL should be reduced in accordance with the applicable correction factors as prescribed in the IND-TM.

- 3.7.3 Detailed calculation of the maximum permissible SWL for all openings and louvres of the proposed SPS is provided in Appendix 3.2 and the results are summarised in Table 3.6 and Table 3.7. Location of fixed noise source and the representative NSRs are indicated in Figure 3.4.

Table 3.6 Maximum Permissible Sound Power Level for Proposed Sewage Pumping Station

| Fixed Noise Source | Description | Maximum Permissible SWL, dB(A) |
|--------------------|--|--------------------------------|
| FPN1 | Proposed Sewage Pumping Station within Application | 80 |

Table 3.7 Predicted Fixed Noise Levels at Representative NSRs

| Fixed Noise Source | Fixed Noise Criteria, dB(A) | | Predicted Noise Level at NSR, dB(A) |
|--------------------|-----------------------------|-------|-------------------------------------|
| | Day / Evening | Night | |
| NSR7 | 51 | 45 | 45 |
| NRS8 | 51 | 45 | 45 |

- 3.7.4 The maximum permissible SWL for all openings and louvres of the proposed SPS is 80 dB(A). It is expected that by ensuring the required maximum SWL is maintained, no exceedance of fixed noise level at NSRs is anticipated.

- 3.7.5 In order to ensure the fixed noise generated by the Proposed Development would not cause excessive impact to neighbouring noise sensitive uses, **all fixed noise, including** openings and louvres of the proposed sewage pumping station in the Proposed Development will be designed to meet the relevant noise criteria as stipulated in the HKPSG.

3.8 Prediction and Evaluation of Cumulative Fixed Noise Impacts

- 3.8.1 The results of cumulative fixed noise impact assessment for daytime/evening and night-time periods of the existing fixed noise sources nearby and proposed on-site SPS are summarised in Table 3.8 and Table 3.9 below with detailed calculations provided in Appendix 3.3.

Table 3.8 Predicted Noise Levels at Representative NSRs (Daytime and Evening Periods) – Unmitigated Scenario

| NSR ID | Predicted Fixed Noise Level, dB(A) | Area Sensitivity Rating | Noise Criteria, dB(A) | Compliance |
|--------|------------------------------------|-------------------------|-----------------------|------------|
| FNSR1 | 53 | A | 60 | Yes |
| FNSR2 | 55 | A | 60 | Yes |
| FNSR3 | 57 | A | 60 | Yes |
| FNSR4 | 53 | A | 60 | Yes |

Table 3.9 Predicted Noise Levels at Representative NSRs (Night-time Period) – Unmitigated Scenario

| NSR ID | Predicted Fixed Noise Level, dB(A) | Area Sensitivity Rating | Noise Criteria, dB(A) | Compliance |
|--------|------------------------------------|-------------------------|-----------------------|------------|
| FNSR1 | 43 | A | 50 | Yes |
| FNSR2 | 43 | A | 50 | Yes |
| FNSR3 | 46 | A | 50 | Yes |
| FNSR4 | 48 | A | 50 | Yes |

3.8.2 According to the fixed noise calculations, no exceedance is predicted for both daytime/evening and night-time periods, and thus no adverse fixed noise impact due to the existing noise sources is envisaged. No noise mitigation measures is needed for the Proposed Development.

3.9 Summary

3.9.1 Noise impacts from the existing fixed noise sources in the vicinity of the Application Site have been examined. According to the fixed noise calculations, no exceedance is predicted for both daytime/evening and night-time periods, and thus no adverse fixed noise impact due to the existing noise sources is envisaged. No noise mitigation measures is needed for the Proposed Development.

3.9.2 Noise impact due to operation of the proposed SPS has also been assessed. With the fixed plant properly selected and designed to meet the maximum permissible SWL, no adverse operational fixed noise impact on the nearby NSRs is anticipated.

4. OVERALL CONCLUSIONS

- 4.1.1 The potential impact on proposed development from road traffic noise and fixed noise sources have been evaluated.
- 4.1.2 The assessment results indicated that the HKPSG road traffic noise standard can be met at all NSRs under worst case scenario with proposed building design. No adverse traffic noise impact is anticipated with proposed development.
- 4.1.3 The potential fixed noise impact has been assessed based on the proposed development scheme. No adverse fixed noise impact is envisaged upon the proposed development.
- 4.1.4 With careful design in compliance with HKPSG standard, the future fixed noise sources within the proposed development would not cause any unacceptable noise impact upon the surroundings.

Figures

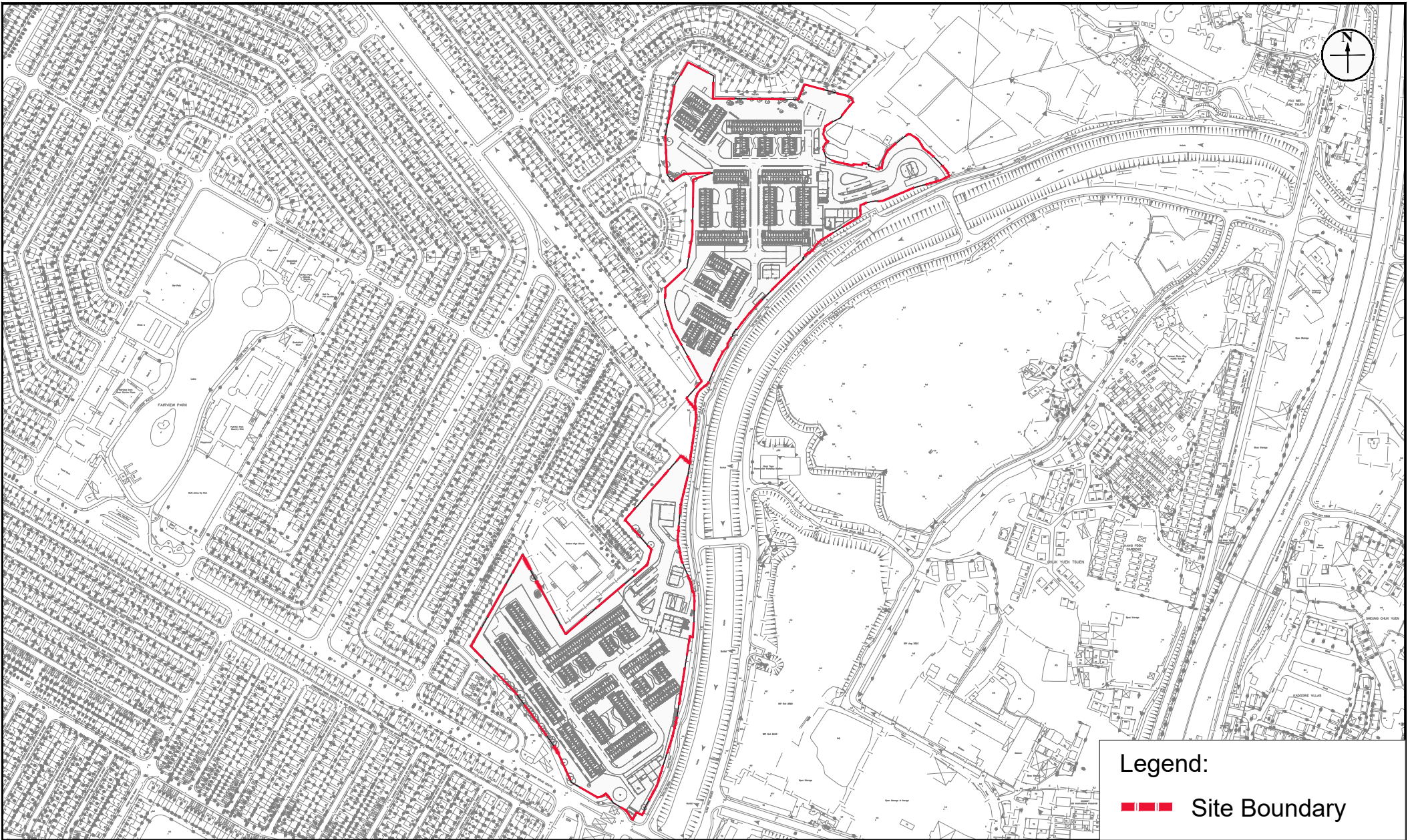


Figure: 1.1

Title: Site Location Plan

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

Legend:

■ ■ ■ Site Boundary

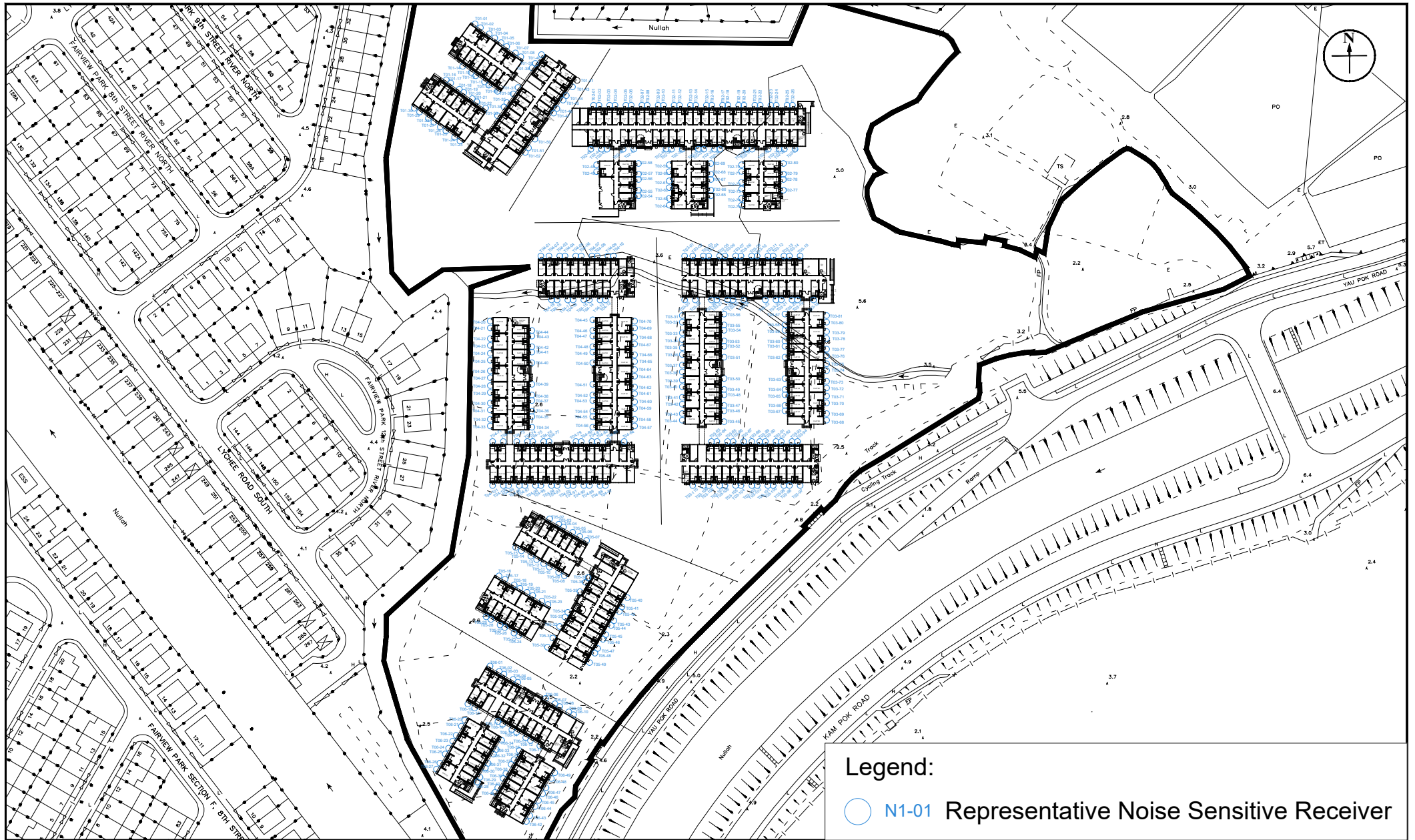
RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024



Legend:

○ N1-01 Representative Noise Sensitive Receiver

Figure: 2.1

Title: Location of Noise Sensitive Receivers for Traffic Noise Impact Assessment (Zone 1, G/F)

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long



Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

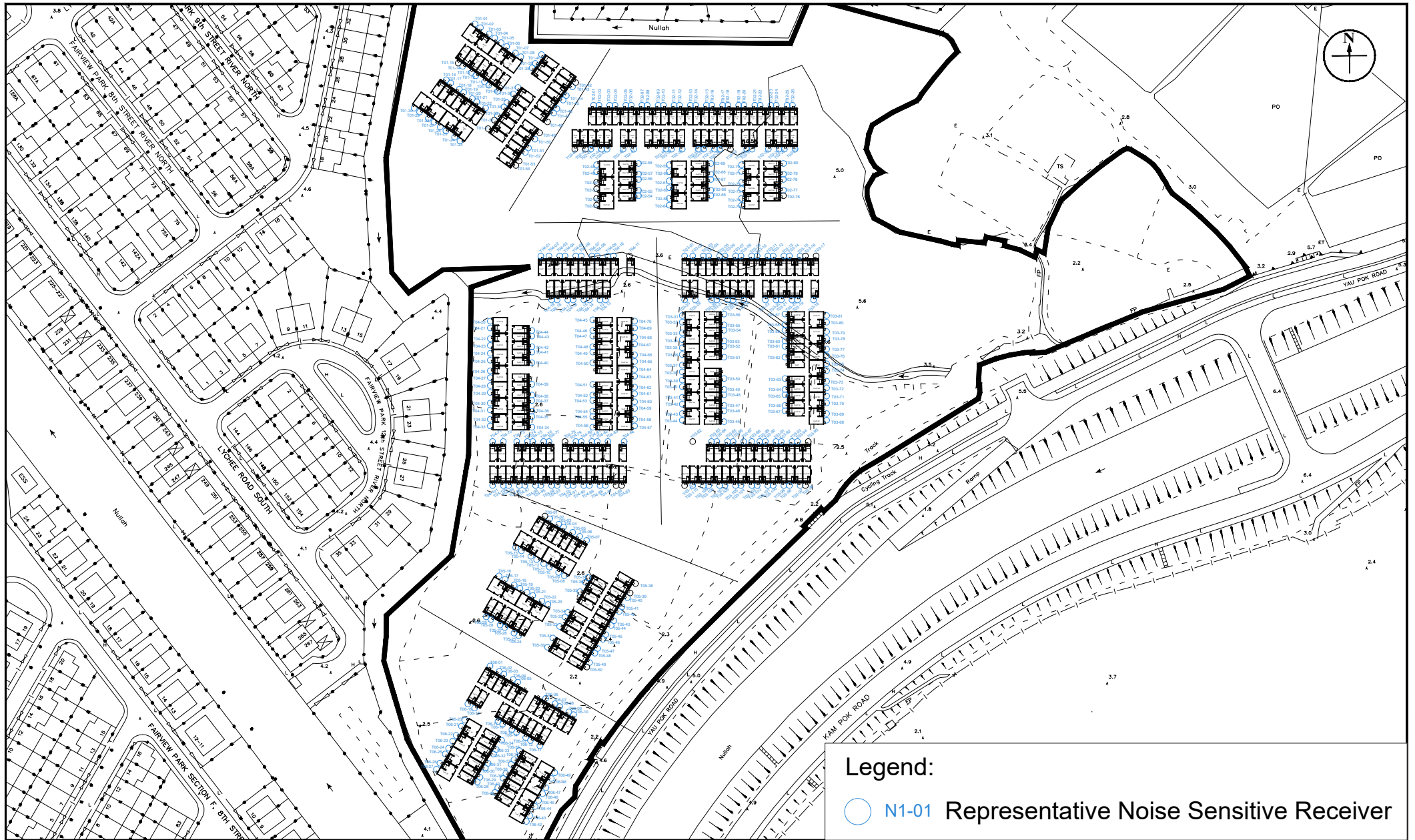


Figure: 2.2

Title: Location of Noise Sensitive Receivers for Traffic Noise Impact Assessment (Zone 1, 1/F - 2/F)

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

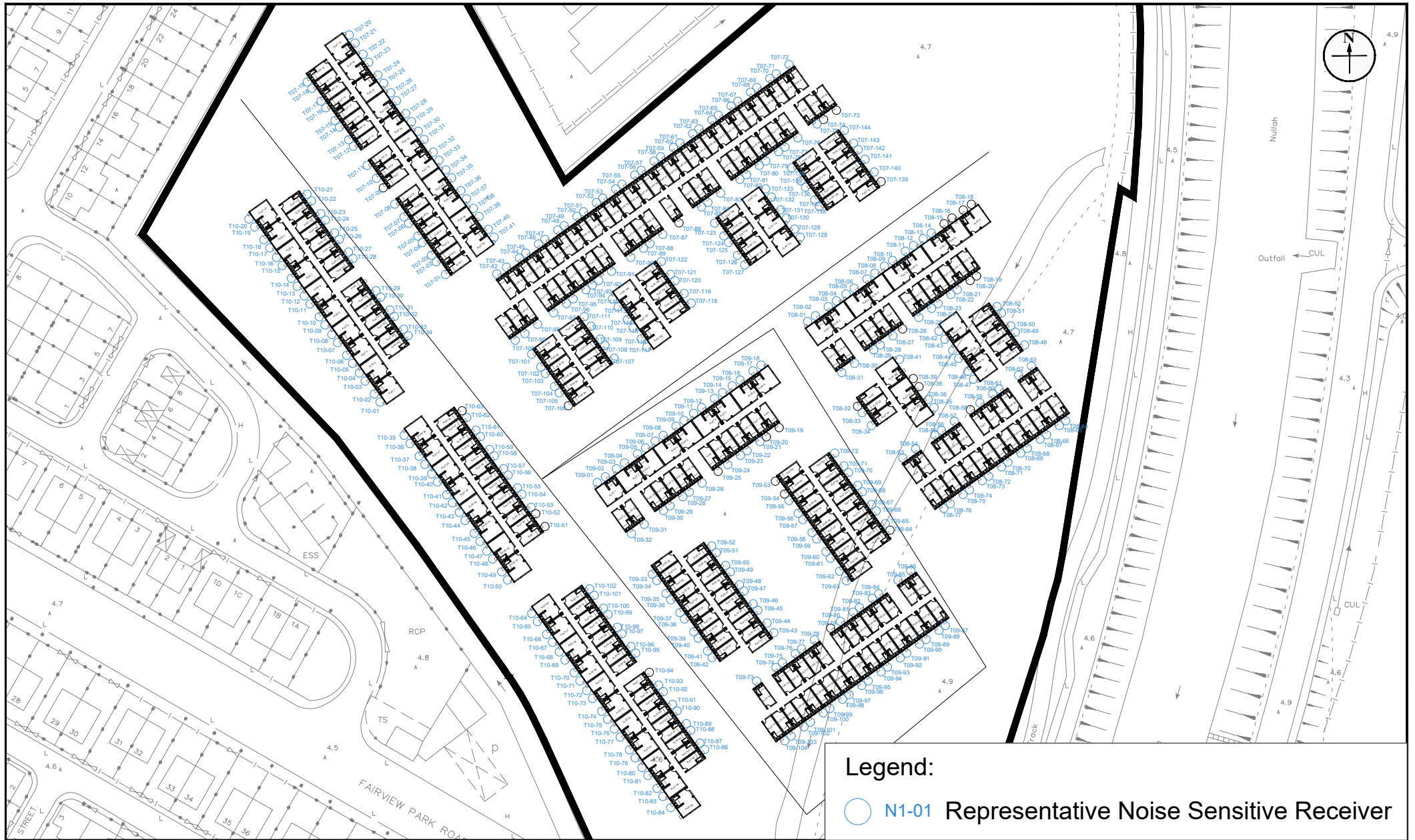


Figure: 2.4

Title: Location of Noise Sensitive Receivers for Traffic Noise Impact Assessment (Zone 2, 1/F - 2/F)

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

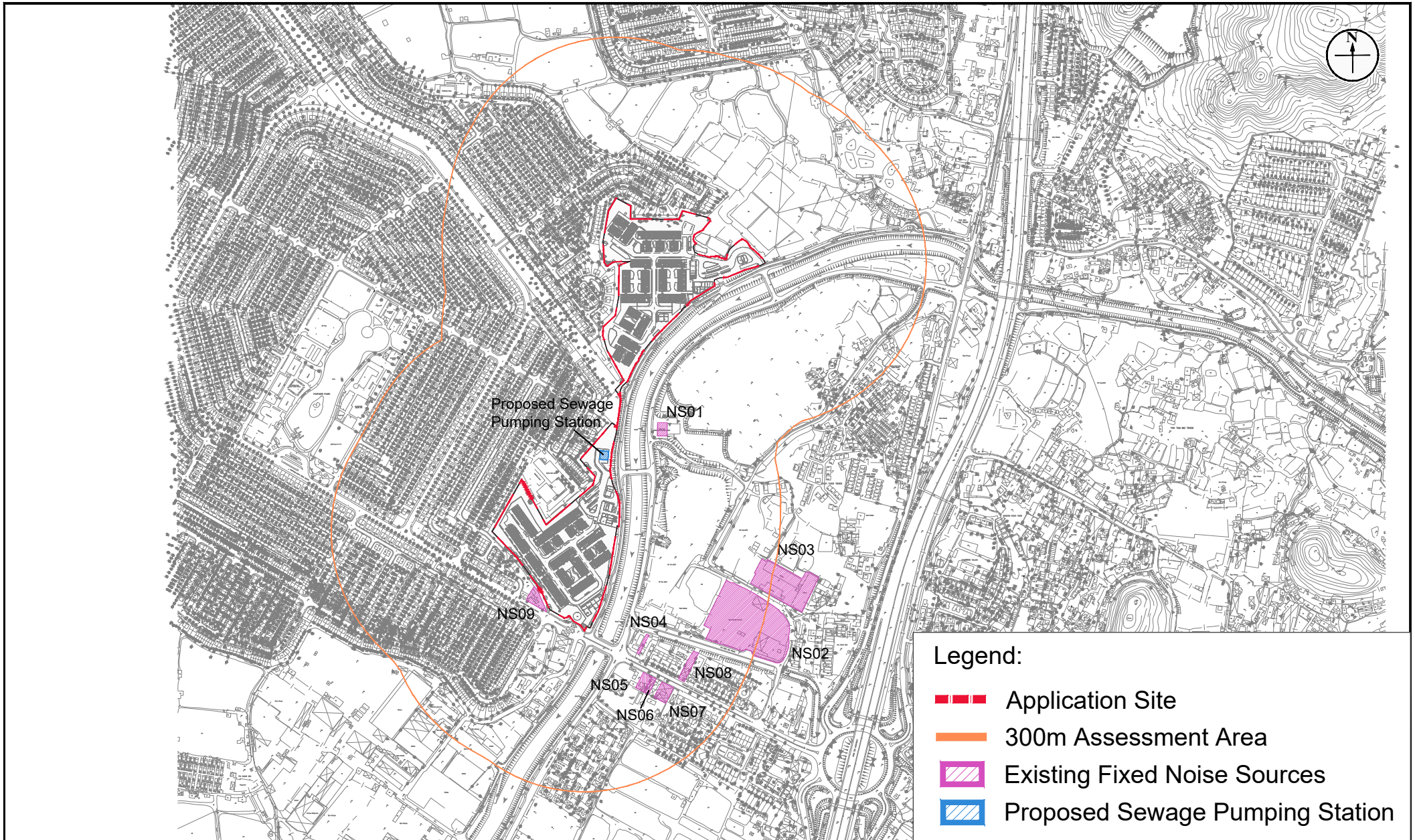


Figure: 3.1

Title: Location of Fixed Noise Sources

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

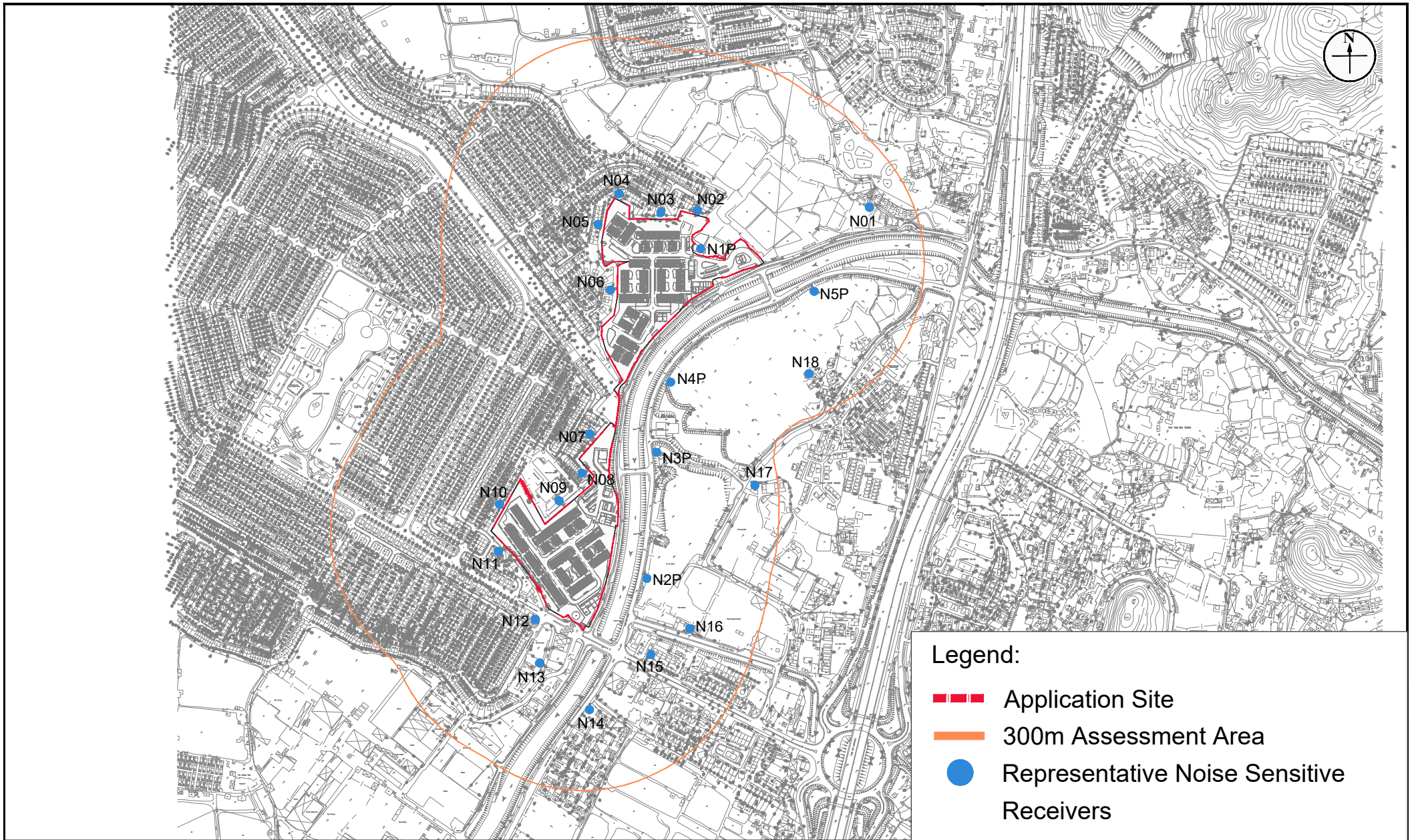


Figure: 3.2

Title: Location of Representative Noise Sensitive Receivers

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

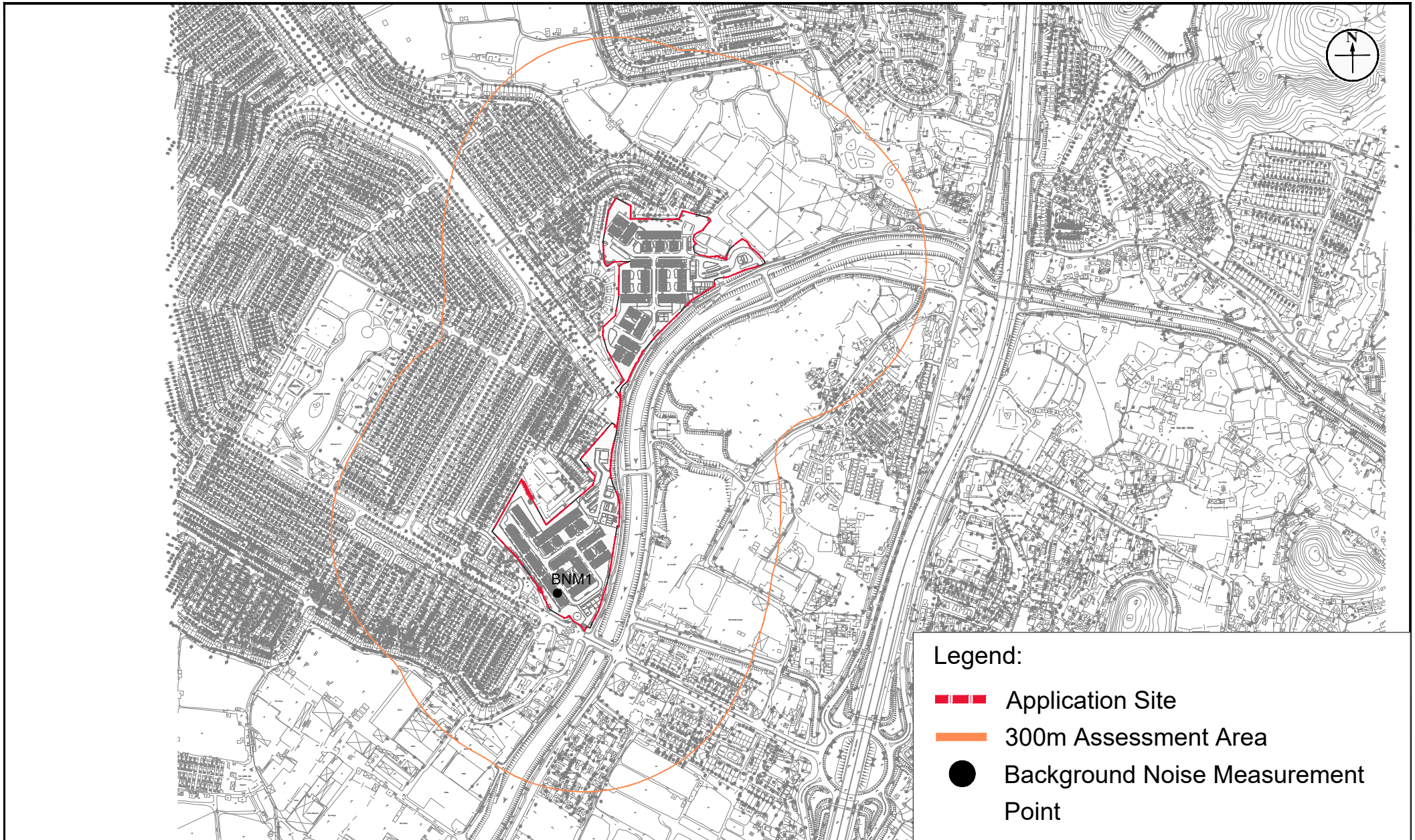
RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024



Legend:

- ▬▬▬ Application Site
- ▬▬▬ 300m Assessment Area
- Background Noise Measurement Point

Figure: 3.3

Title: Location of Background Noise Measurement

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long



Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

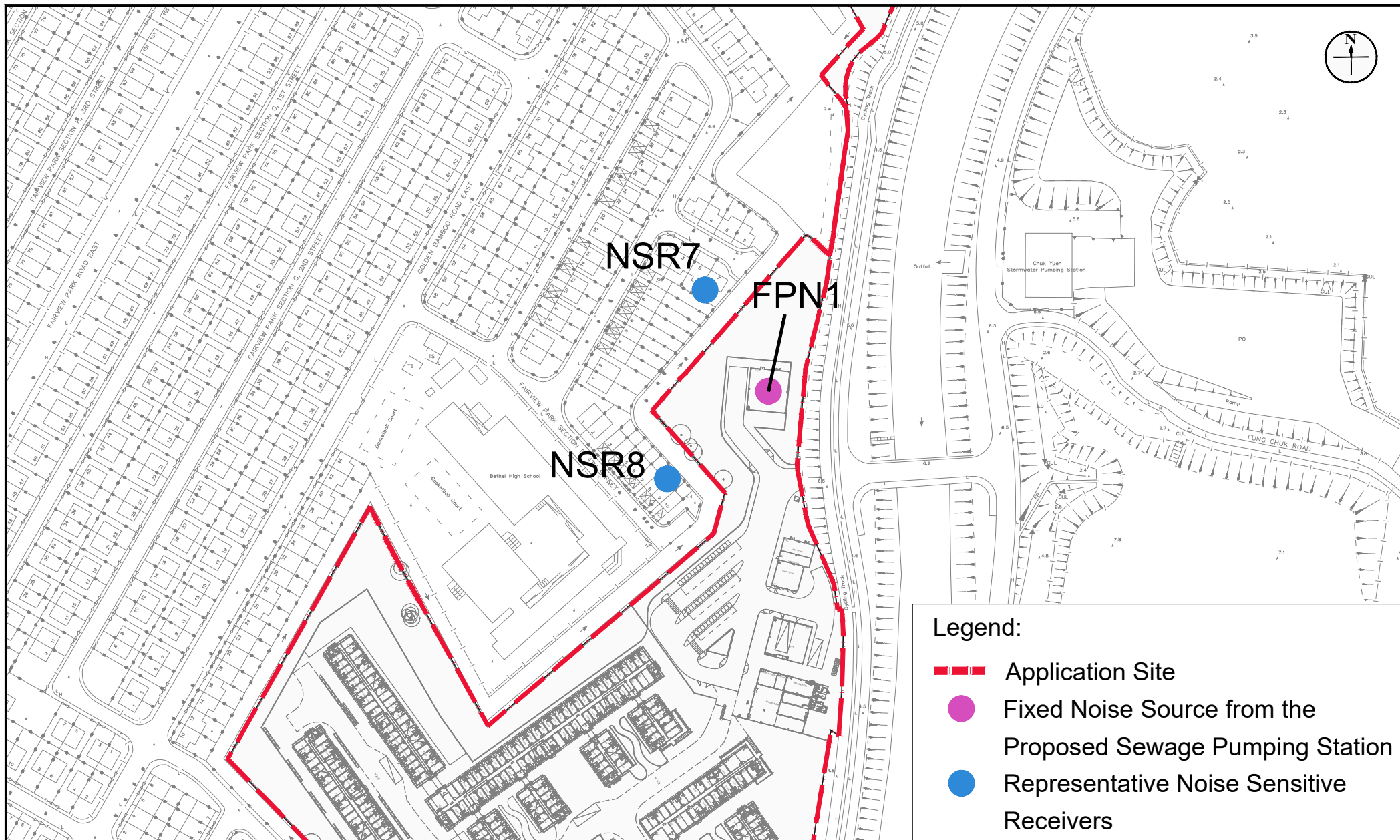


Figure: 3.4

Title: Location of the Proposed Sewage Pumping Station and Representative Noise Sensitive Receivers

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long

RAMBOLL

Drawn by: GY

Checked by: SL

Rev.: 1.0

Date: Feb 2024

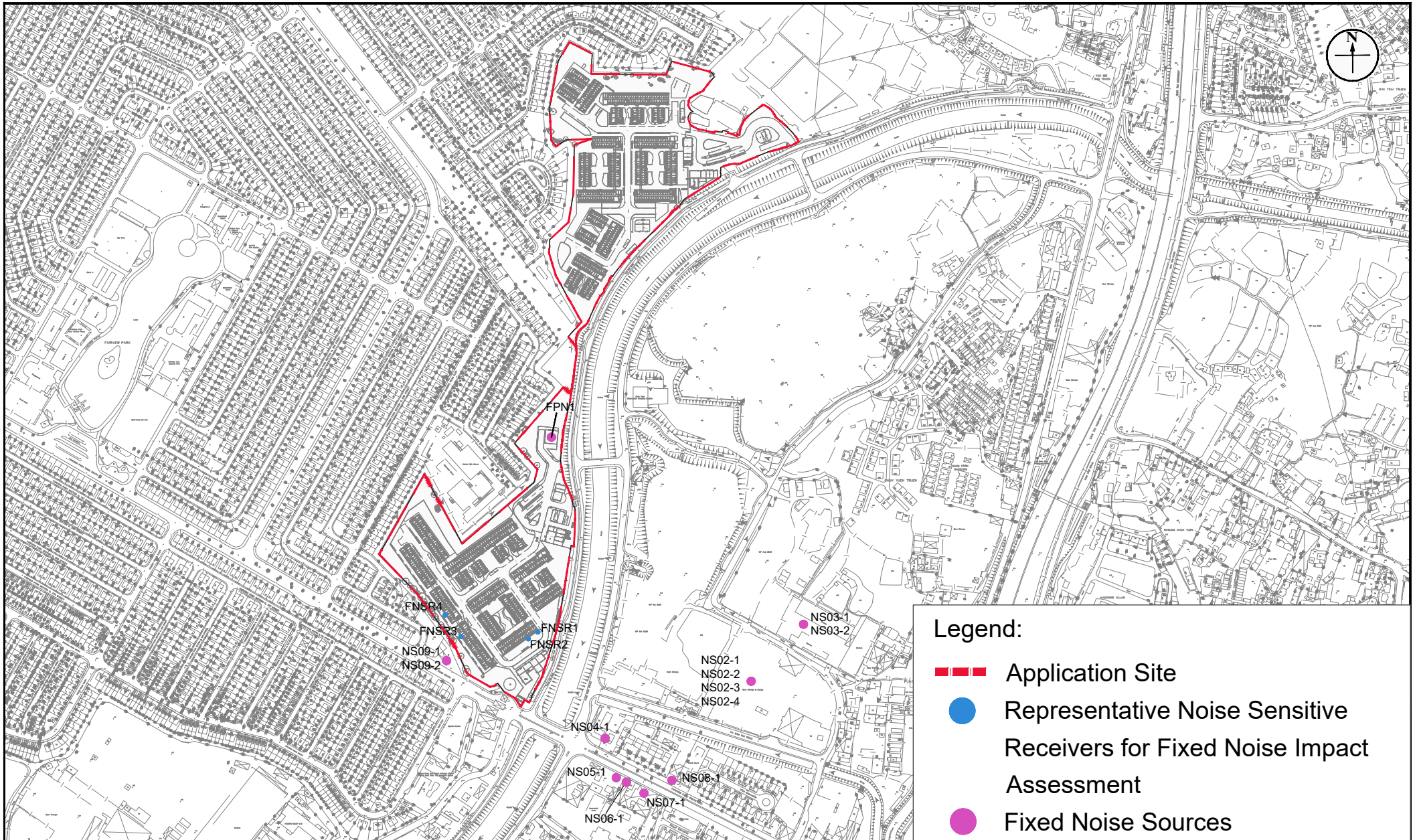


Figure: 3.5

Title: Location of Fixed Noise Sources and Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

Project: Design and Construction of Light Public Housing at Yau Pok Road, Yuen Long



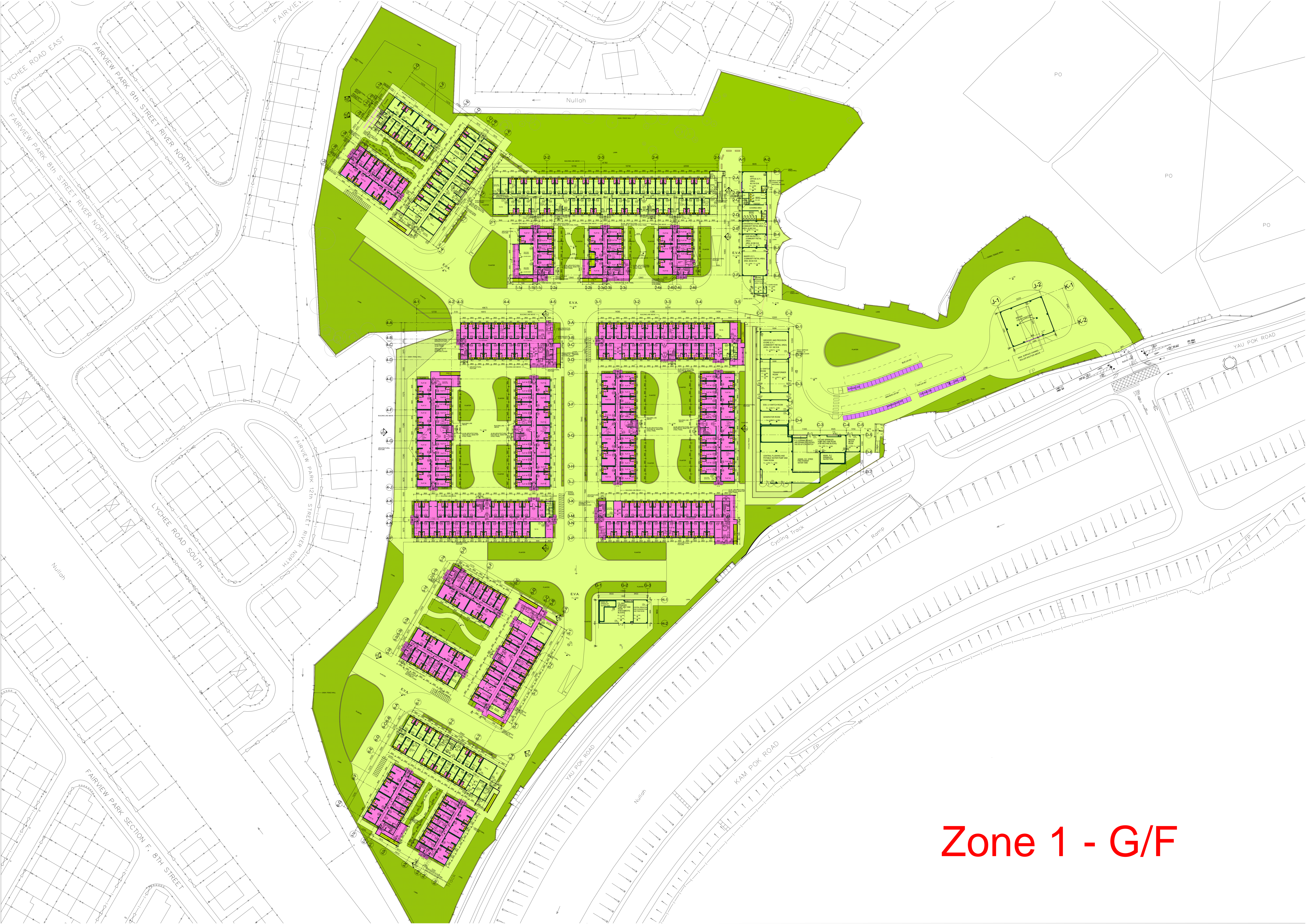
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Checked by: SL

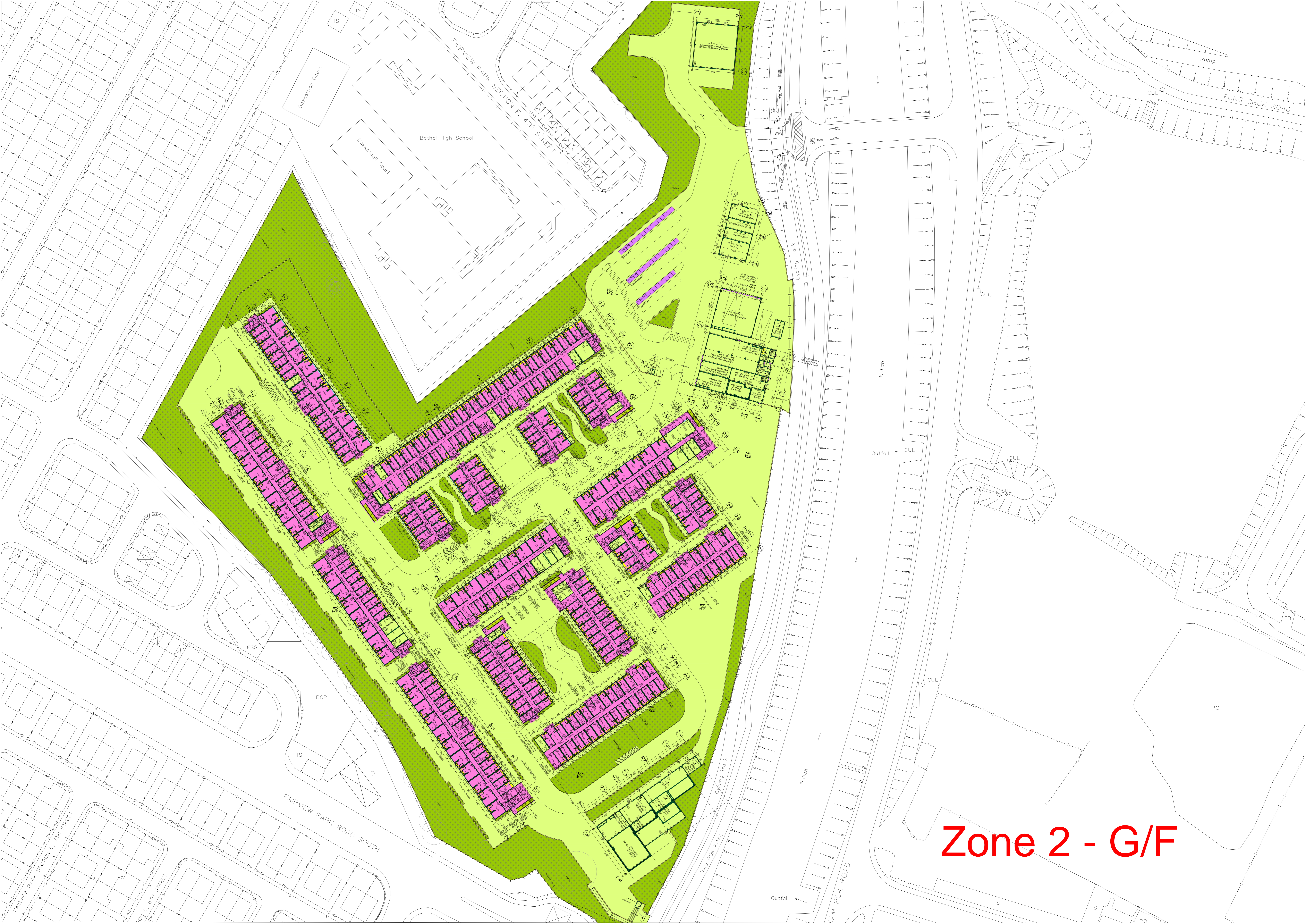
Rev.: 1.0

Date: Feb 2024

Appendix 1.1
Building Layout Plans



Zone 1 - G/F



Zone 2 - G/F



Zone 2 - 1/F & 2/F

Appendix 2.1

Traffic Forecast, TD Endorsement on Traffic Forecast Methodology and Written Confirmation from Traffic Consultant

Gary Yuen

From: Chi Kong LEUNG <chikongleung@td.gov.hk>
Sent: Thursday, September 12, 2024 12:47 PM
To: CKM Asia
Cc: Gary Yuen; Ming Yip TSE
Subject: RE: SS M518: Light Public Housing at Yau Pok Road, Yuen Long - Traffic Forecast
Attachments: J7319_4_TF (YPR).pdf

You don't often get email from chikongleung@td.gov.hk. [Learn why this is important](#)

Dear H.C. Tang,

I refer to your captioned submission.

Please note that Noise Impact Assessment is not under TD's purview. We are not in a position to provide comments on the traffic figures tailor-made for the environmental assessment study.

Notwithstanding the above, we have no objection in principle from traffic engineering perspective on the methodology for estimating traffic forecast for the TNIA.

Thank you.

Regards,
Donald Leung
E/B3, TE/NTW
Transport Department
Tel. 2399 2778

From: CKM Asia [REDACTED]
To: Chi Kong LEUNG <chikongleung@td.gov.hk>
Cc: [REDACTED]
Date: 16/08/2024 05:50 PM
Subject: RE: SS M518: Light Public Housing at Yau Pok Road, Yuen Long - Traffic Forecast

Attn: Transport Department – Mr Donald Leung (Engr / Boundary 3)

Dear Mr Leung,

We refer to our Letter [CKM ref.: J7319/4] dated 4th March 2024 pertaining to the submission of traffic forecast for Traffic Noise Impact Assessment (TNIA) in support of the Proposed Light Public Housing at Yau Pok Road (YPR) Site. The softcopy of the traffic forecast submission is attached for your ease of reference.

We seek your “no objection” reply to the traffic forecast for TNIA as the earliest convenience. To facilitate timely approval of TNIA, the Project Environmental Consultant has to submit your confirmation to the EPD.

Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants

[Redacted]

From: CKM Asia
Sent: Tuesday, July 30, 2024 5:50 PM
To: Chi Kong LEUNG <chikongleung@td.gov.hk>
Subject: RE: SS M518: Light Public Housing at Yau Pok Road, Yuen Long - Traffic Forecast

Attn: Transport Department – Mr Donald Leung (Engr / Boundary 3)

Dear Mr Leung,

We refer to our Letter [CKM ref.: J7319/4] dated 4th March 2024 pertaining to the submission of traffic forecast for Traffic Noise Impact Assessment (TNIA) in support of the Proposed Light Public Housing at Yau Pok Road (YPR) Site. The softcopy of the traffic forecast submission is attached for your ease of reference.

We seek your “no objection” reply to the traffic forecast for TNIA as the earliest convenience. To facilitate timely approval of TNIA, the Project Environmental Consultant has to submit your confirmation to the EPD.

Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants

[Redacted]



Our Ref: J7319/4 (YPR)

xx January 2024

Transport Department
NT Regional Office
Traffic Engineering (NTW) Division
7/F, Mongkok Government Offices
30 Luen Wan Street
Mong Kok, Kowloon

Attn: Mr LEUNG Chi Kong, Donald (Engr / Boundary 3)

(BY POST)

Dear Mr Leung,

**Contract No. SS M518 Design and Construction of
Light Public Housing at Yau Pok Road, Yuen Long, at Tuen Mun
Area 3A and at Choi Hing Road, Ngau Tau Kok**

**Traffic Forecast for Traffic Noise Impact Assessment
for Yau Pok Road Site**

CKM Asia Limited is the appointed Traffic Consultant for the captioned Contract. We have produced future year traffic data for the Environmental Consultant to conduct the Traffic Noise Impact Assessment (TNIA) for **Yau Pok Road (YPR) Site** in Yuen Long.

We are pleased to submit the traffic forecast methodology and the future year traffic data used for the TNIA – please see attached. It is much appreciated if your department could comment on the traffic forecast methodology and the future year traffic data used for the TNIA at your earliest convenience.

Should you have any queries, please do not hesitate to contact the undersigned. Thank you for your attention.

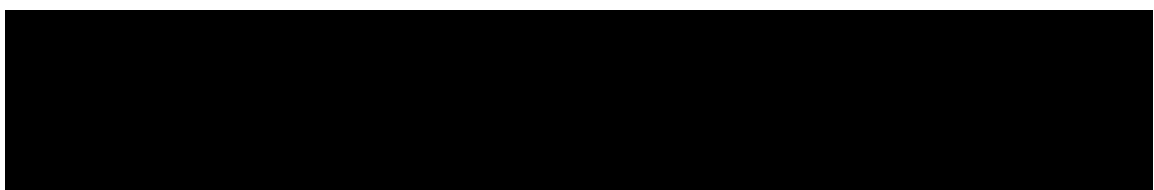
Yours sincerely

TANG Ho Chung
Principal Traffic Engineer
DRAFT

Encl. xx pages

cc: Chevalier – China Railway Joint Venture
Project Environmental Consultant

KIM\THC



Technical Note on Traffic Forecast for Traffic Noise Impact Assessment for Yau Pok Road Site

CKM Asia Limited is the appointed Traffic Consultant for the captioned Contract. We have produced future year traffic data for the Environmental Consultant to conduct the Traffic Noise Impact Assessment (TNIA) for Yau Pok Road (YPR) Site in Yuen Long.

(A) Background

A Transport and Traffic Impact Assessment (TTIA) Report was prepared for the YPR Site as part of the s16 planning application (TPB No. A/YL-MP/341), which was approved on 9th June 2023. According to the Rural and New Town Planning Committee (RNTPC) Meeting Paper No. A/YL-MP/341, "Transport Department has no in-principle objection to the planning application from the traffic engineering perspective".

To be consistent with the approved TTIA Report, the same traffic forecasting methodology is adopted for producing the future year traffic data for TNIA.

(B) Traffic Data for TNIA

The 2040 traffic data for TNIA is produced as follows:

- DRAFT
- (a) The road sections where traffic data is required are located within 300m of the YPR Site – please refer to Figure EIA/YPR; and
 - (b) The 2040 traffic data is classified into 2 vehicle categories, including:
 - i. Light Vehicles (LV), including motorcycle, private car and taxi; and
 - ii. Heavy Vehicles (HV), including light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus.

The latest peak hour traffic flows were obtained from the manual classified traffic counts conducted during the AM and PM peak periods on Monday 5th January 2024 for the road sections where traffic data is required. The 2040 traffic flows for TNIA were derived based on the (i) observed traffic flows; (ii) adopted traffic growth rate, (iii) traffic generated by YPR Site; and (iv) traffic generated by the major planned developments located in the vicinity.

(C) Traffic Growth Rate

A growth factor is used to project traffic flows for year 2040. To obtain this factor, reference is made to: (i) *Hong Kong Population Projections* published by Census and Statistics Department (C&SD); (ii) *Annual Traffic Census (ATC)* published by TD; and (iii) *Territorial Population and Employment Data Matrix (TPEDM)* published by Planning Department (PlanD). The findings from the review are presented below:

- (i) *Hong Kong Population Projections by C&SD*

The summary of the population projections is shown in Table 1.

TABLE 1 POPULATION PROJECTIONS BY C&SD

| Year | HK Resident Population (in Thousands) |
|---------------------------|---------------------------------------|
| 2024 | 7,526.8 |
| 2040 | 8,137.3 |
| Annual Growth Rate | <u>0.49%</u> |

Table 1 shows that the annual growth rate is around 0.49% from 2024 – 2040.

(ii) ATC by TD

The historical annual average daily traffic of the survey stations in the vicinity of the YPR Site are presented in Table 2.

TABLE 2 HISTORIC TRAFFIC INFORMATION FROM THE ATC

| Station No. | Annual Average Daily Traffic (veh/day) in Year | | | | | Annual Growth ⁽¹⁾ |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|
| | 2015 | 2016 | 2017 | 2018 | 2019 | |
| 5016 | 86,180 | 92,230 | 90,650 | 86,230 | 90,860 | 1.33% |
| 5297 | 6,140* | 6,400* | 6,300* | 8,540 | 7,530 | 5.23% |
| 5505 | 12,090 | 12,590* | 12,390* | 12,700* | 13,330 | 2.47% |
| 5508 | 85,910 | 90,760* | 90,110* | 92,980* | 80,460 | -1.63% |
| Overall | <u>190,320</u> | <u>201,980</u> | <u>199,450</u> | <u>200,450</u> | <u>192,180</u> | <u>0.24%</u> |

Note: * estimated by Growth Factor

⁽¹⁾ AADT for years 2020 – 2022 are excluded due to the outbreak of COVID-19 which resulted in abnormal traffic condition

Station No.: 5016 – San Tin Highway, Castle Peak Road & San Tam Road (between Kam Tin Road and Fairview Park Boulevard)

5297 – San Tam Road (between Castle Peak Road – Mai Po and Fairview Park Boulevard RA)

5505 – San Tam Road (between Fairview Park Boulevard RA and end)

5508 – San Tin Highway (between Fairview Park Boulevard and Lok Ma Chau Road)

Table 2 shows that the annual growth rate obtained from ATC is around 0.24%.

(iii) TPEDM by PlanD

The population and employment data for Yuen Long District in 2019, 2026 and 2031 is summarised in Table 3.

TABLE 3 TPEDM DATA FOR YUEN LONG

| Year | Population | Employment | Total |
|---------------------------|------------|------------|----------------------|
| 2019 | 175,150 | 68,100 | 243,250 |
| 2026 | 172,350 | 70,700 | 243,050 |
| 2031 | 159,850 | 70,250 | 230,100 |
| Annual Growth Rate | | | <u>-0.46%</u> |

Table 3 shows that the annual growth rate from TPEDM is negative, i.e. -0.46%.

(iv) *Adopted Traffic Growth*

The above findings show that the highest growth rate is 0.49% per annum which is the population projection. To err on the high side, an annual growth rate of 1% is used to produce the traffic forecast.

(D) Traffic Generation of YPR Site

The traffic generation of YPR Site, is extracted from the approved TTIA Report and are summarised in Table 4.

TABLE 4 YPR SITE TRAFFIC GENERATION

| YPR Site | Traffic Generation (pcu/hour) | | | |
|--------------|-------------------------------|------------------|------------------|------------------|
| | AM Peak | | PM Peak | |
| | IN | OUT | IN | OUT |
| Zone 1 | 26 | 29 | 38 | 35 |
| Zone 2 | 25 | 28 | 35 | 32 |
| Total | <u>51</u> | <u>57</u> | <u>73</u> | <u>67</u> |

Note: ⁽¹⁾ extracted from Table 4.5 of TTIA Report for YPR Site

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(E) Planned Developments in the Vicinity

The traffic generated by major planned developments located in the vicinity of the YPR Site is included in the traffic forecast and these are summarised in Table 5.

TABLE 5 DETAILS OF MAJOR PLANNED DEVELOPMENTS

| Ref. | Location | Use | Development Parameters (Approx.) |
|------|---|-----------------|---|
| A | Lots 43 S.A RP, 50 S.A and 50 RP in D.D.101, Wo Shang Wai, Mai Po (TPB No. A/YL-MP/291) | Private Housing | 268 flats |
| B | Lots 3054 S.B RP and 3055 in D.D.104, near Yau Mei San Tsuen (TPB No. A/YL-MP/247-1) | Private Housing | 105 flats |
| C | Various Lots in D.D. 104 and Adjoining Government Land, Mai Po (TPB No. A/YL-MP/205-1) | Private Housing | 71 flats |
| D | Various Lots in D.D. 104 and Adjoining Government Land, Mai Po (TPB No. A/YL-MP/287) | Private Housing | 65 flats |
| E | Various Lots in D.D. 104 and adjoining Government Land, Ngau Tam Mei (TPB No. A/YL-NTM/432) | Public Housing | 1,208 flats |
| F | Sha Po North Residential Development (Phase 1 and Phase 2) (TPB No. A/YL-KTN/633) | Private Housing | 4,282 flats |
| G | Public Housing Development at Kam Tin South | Public Housing | 8,100 flats and 43,000m ² retail GFA |
| H | Kam Tin West Outlet Mall (TPB No. A/YL-NSW/241) | Retail | 37,171m ² retail GFA |
| I | Sha Po North Residential Development (Phase 3) (TPB No. A/YL-KTN/604) | Private Housing | 3,891 flats and 5,500m ² retail GFA |

(F) 2040 Traffic Data

By assuming the annual growth rate of 1%, the total traffic growth rate from 2024 to 2040 is calculated as:

$$\text{Year 2024 to 2040 total traffic growth rates} = (1 + 1\%)^{16} = \underline{118\%}$$

The 2040 traffic flows with the YPR Site are derived using the following equation:

$$\begin{array}{l} \text{2040 Traffic Flows} \\ \text{with YPR Site} \end{array} = \begin{array}{l} \text{2024 Observed} \\ \text{Traffic Flows} \end{array} \times 118\% + \begin{array}{l} \text{Traffic generated} \\ \text{by YPR Site} \end{array} + \begin{array}{l} \text{Traffic generated} \\ \text{by Planned} \\ \text{Developments} \end{array}$$

Based on the above traffic forecasting methodology, the year 2040 traffic data are presented in Table 6.

DRAFT

TABLE 6 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YAU POK ROAD SITE

YEAR 2040 TRAFFIC FORECAST

Date: 19 January 2024

Job No.: J7319

| Link ID | Road Section | From Road | To Road | AM Peak Hour | | |
|---------|------------------------------|-------------------------|---------------------------|------------------------|---------------------|-------|
| | | | | Traffic Flows (veh/hr) | Vehicle Composition | |
| | | | | | LV | HV |
| L001 | Yau Pok Road (NB) | Unnamed Road | Castle Peak Road - Tam Mi | 100 | 89.8% | 10.2% |
| L002 | Kam Pok Road (NB) | Unnamed Road | Ha Chuk Yuen Road | 200 | 56.5% | 43.5% |
| L003 | Kam Pok Road (SB) | Ha Chuk Yuen Road | Unnamed Road | 200 | 53.9% | 46.1% |
| L004 | Unnamed Road (EB) | Yau Pok Road | Kam Pok Road | 50 | 41.1% | 58.9% |
| L005 | Unnamed Road (WB) | Kam Pok Road | Yau Pok Road | 100 | 50.0% | 50.0% |
| L006 | Yau Pok Road (NB) | Unnamed Road | Unnamed Road | 50 | 95.1% | 4.9% |
| L007 | Kam Pok Road (NB) | Fung Chuk Road | Unnamed Road | 100 | 57.3% | 42.7% |
| L008 | Kam Pok Road (SB) | Unnamed Road | Fung Chuk Road | 100 | 51.8% | 48.2% |
| L009 | Ha Chuk Yuen Road (NB) | Fung Chuk Road | Kam Pok Road | 50 | 72.7% | 27.3% |
| L010 | Ha Chuk Yuen Road (SB) | Kam Pok Road | Fung Chuk Road | 50 | 81.8% | 18.2% |
| L011 | Unnamed Road (EB) | Unnamed Road | Unnamed Road | 100 | 61.1% | 38.9% |
| L012 | Unnamed Road (WB) | Unnamed Road | Unnamed Road | 100 | 76.8% | 23.2% |
| L013 | Fung Chuk Road (EB) | Kam Pok Road | Ha Chuk Yuen Road | 50 | 100.0% | 0.0% |
| L014 | Fung Chuk Road (WB) | Ha Chuk Yuen Road | Kam Pok Road | 50 | 100.0% | 0.0% |
| L015 | Kam Pok Road (SB) | Fung Chuk Road | Unnamed Road | 150 | 54.0% | 46.0% |
| L016 | Kam Pok Road (NB) | Unnamed Road | Fung Chuk Road | 100 | 57.8% | 42.2% |
| L017 | Unnamed Road (EB) | Yau Pok Road | Kam Pok Road | 50 | 39.9% | 60.1% |
| L018 | Unnamed Road (WB) | Kam Pok Road | Yau Pok Road | 50 | 29.9% | 70.1% |
| L019 | Yau Pok Road (NB) | Fairview Park Boulevard | Unnamed Road | 100 | 93.2% | 6.8% |
| L020 | Kam Pok Road (NB) | Ha San Wai Road | Unnamed Road | 100 | 74.0% | 26.0% |
| L021 | Kam Pok Road (SB) | Unnamed Road | Ha San Wai Road | 100 | 70.6% | 29.4% |
| L022 | Ha Chuk Yuen Road (NB) | Ha San Wai Road | Fung Chuk Road | 50 | 100.0% | 0.0% |
| L023 | Ha Chuk Yuen Road (SB) | Fung Chuk Road | Ha San Wai Road | 50 | 100.0% | 0.0% |
| L024 | Ha San Wai Road (EB) | Kam Pok Road | Unnamed Road | 150 | 73.5% | 26.5% |
| L025 | Ha San Wai Road (WB) | Unnamed Road | Kam Pok Road | 50 | 56.5% | 43.5% |
| L026 | Kam Pok Road (SB) | Ha San Wai Road | Fairview Park Boulevard | 100 | 70.0% | 30.0% |
| L027 | Kam Pok Road (NB) | Fairview Park Boulevard | Ha San Wai Road | 100 | 72.2% | 27.8% |
| L028 | Fairview Park Boulevard (EB) | Kam Pok Road | Unnamed Road | 1,050 | 83.8% | 16.2% |
| L029 | Fairview Park Boulevard (WB) | Unnamed Road | Kam Pok Road | 750 | 68.0% | 32.0% |
| L030 | Fairview Park Boulevard (EB) | Yau Pok Road | Kam Pok Road | 950 | 89.8% | 10.2% |
| L031 | Fairview Park Boulevard (WB) | Kam Pok Road | Yau Pok Road | 650 | 73.1% | 26.9% |
| L032 | Fairview Park Boulevard (EB) | Unnamed Road | Yau Pok Road | 1,000 | 90.0% | 10.0% |
| L033 | Fairview Park Boulevard (WB) | Yau Pok Road | Unnamed Road | 650 | 72.8% | 27.2% |
| L034 | Fairview Park Boulevard (EB) | Bauhinia Road East | Unnamed Road | 950 | 91.8% | 8.2% |
| L035 | Fairview Park Boulevard (WB) | Unnamed Road | Bauhinia Road East | 600 | 76.4% | 23.6% |
| L036 | Kam Pok Road (SB) | Fairview Park Boulevard | Kam Pok Road West | 150 | 51.6% | 48.4% |
| L037 | Kam Pok Road (NB) | Kam Pok Road West | Fairview Park Boulevard | 150 | 41.1% | 58.9% |
| L038 | Yau Pok Road (SB) | Fairview Park Boulevard | Kam Pok Road West | 50 | 87.5% | 12.5% |
| L039 | Unnamed Road (SB) | Fairview Park Boulevard | Unnamed Road | 150 | 57.9% | 42.1% |
| L040 | Unnamed Road (SB) | Unnamed Road | Fairview Park Boulevard | 150 | 73.7% | 26.3% |
| L041 | Unnamed Road (NB) | Unnamed Road | Kam Pok Road West | 50 | 52.0% | 48.0% |
| L042 | Unnamed Road (NB) | Kam Pok Road West | Unnamed Road | 50 | 60.0% | 40.0% |

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE 6 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YAU POK ROAD SITE

YEAR 2040 TRAFFIC FORECAST

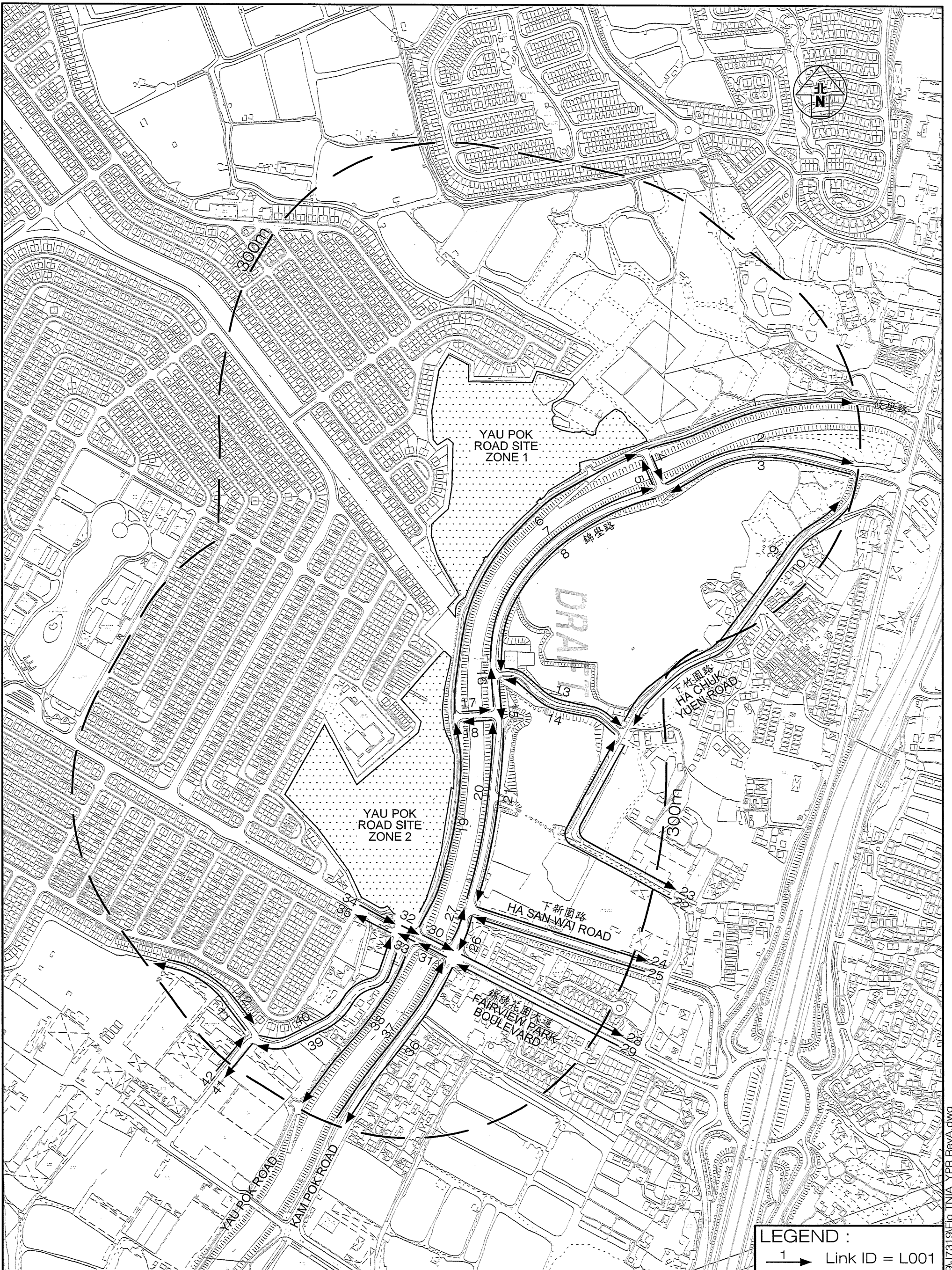
Date: 19 January 2024

Job No.: J7319

| Link ID | Road Section | From Road | To Road | PM Peak Hour | | |
|---------|------------------------------|-------------------------|---------------------------|------------------------|---------------------|-------|
| | | | | Traffic Flows (veh/hr) | Vehicle Composition | |
| | | | | | LV | HV |
| L001 | Yau Pok Road (NB) | Unnamed Road | Castle Peak Road - Tam Mi | 100 | 92.9% | 7.1% |
| L002 | Kam Pok Road (NB) | Unnamed Road | Ha Chuk Yuen Road | 150 | 61.9% | 38.1% |
| L003 | Kam Pok Road (SB) | Ha Chuk Yuen Road | Unnamed Road | 200 | 65.5% | 34.5% |
| L004 | Unnamed Road (EB) | Yau Pok Road | Kam Pok Road | 50 | 60.4% | 39.6% |
| L005 | Unnamed Road (WB) | Kam Pok Road | Yau Pok Road | 100 | 72.7% | 27.3% |
| L006 | Yau Pok Road (NB) | Unnamed Road | Unnamed Road | 50 | 94.6% | 5.4% |
| L007 | Kam Pok Road (NB) | Fung Chuk Road | Unnamed Road | 100 | 65.7% | 34.3% |
| L008 | Kam Pok Road (SB) | Unnamed Road | Fung Chuk Road | 150 | 63.9% | 36.1% |
| L009 | Ha Chuk Yuen Road (NB) | Fung Chuk Road | Kam Pok Road | 50 | 77.8% | 22.2% |
| L010 | Ha Chuk Yuen Road (SB) | Kam Pok Road | Fung Chuk Road | 50 | 88.2% | 11.8% |
| L011 | Unnamed Road (EB) | Unnamed Road | Unnamed Road | 100 | 58.6% | 41.4% |
| L012 | Unnamed Road (WB) | Unnamed Road | Unnamed Road | 100 | 65.5% | 34.5% |
| L013 | Fung Chuk Road (EB) | Kam Pok Road | Ha Chuk Yuen Road | 50 | 100.0% | 0.0% |
| L014 | Fung Chuk Road (WB) | Ha Chuk Yuen Road | Kam Pok Road | 50 | 100.0% | 0.0% |
| L015 | Kam Pok Road (SB) | Fung Chuk Road | Unnamed Road | 150 | 65.4% | 34.6% |
| L016 | Kam Pok Road (NB) | Unnamed Road | Fung Chuk Road | 100 | 64.1% | 35.9% |
| L017 | Unnamed Road (EB) | Yau Pok Road | Kam Pok Road | 50 | 44.8% | 55.2% |
| L018 | Unnamed Road (WB) | Kam Pok Road | Yau Pok Road | 50 | 45.8% | 54.2% |
| L019 | Yau Pok Road (NB) | Fairview Park Boulevard | Unnamed Road | 50 | 90.0% | 10.0% |
| L020 | Kam Pok Road (NB) | Ha San Wai Road | Unnamed Road | 50 | 87.3% | 12.7% |
| L021 | Kam Pok Road (SB) | Unnamed Road | Ha San Wai Road | 100 | 78.6% | 21.4% |
| L022 | Ha Chuk Yuen Road (NB) | Ha San Wai Road | Fung Chuk Road | 50 | 100.0% | 0.0% |
| L023 | Ha Chuk Yuen Road (SB) | Fung Chuk Road | Ha San Wai Road | 50 | 100.0% | 0.0% |
| L024 | Ha San Wai Road (EB) | Kam Pok Road | Unnamed Road | 150 | 82.4% | 17.6% |
| L025 | Ha San Wai Road (WB) | Unnamed Road | Kam Pok Road | 50 | 78.9% | 21.1% |
| L026 | Kam Pok Road (SB) | Ha San Wai Road | Fairview Park Boulevard | 150 | 80.6% | 19.4% |
| L027 | Kam Pok Road (NB) | Fairview Park Boulevard | Ha San Wai Road | 100 | 85.2% | 14.8% |
| L028 | Fairview Park Boulevard (EB) | Kam Pok Road | Unnamed Road | 700 | 79.2% | 20.8% |
| L029 | Fairview Park Boulevard (WB) | Unnamed Road | Kam Pok Road | 800 | 80.4% | 19.6% |
| L030 | Fairview Park Boulevard (EB) | Yau Pok Road | Kam Pok Road | 550 | 81.9% | 18.1% |
| L031 | Fairview Park Boulevard (WB) | Kam Pok Road | Yau Pok Road | 750 | 82.8% | 17.2% |
| L032 | Fairview Park Boulevard (EB) | Unnamed Road | Yau Pok Road | 600 | 82.5% | 17.5% |
| L033 | Fairview Park Boulevard (WB) | Yau Pok Road | Unnamed Road | 750 | 82.9% | 17.1% |
| L034 | Fairview Park Boulevard (EB) | Bauhinia Road East | Unnamed Road | 550 | 86.0% | 14.0% |
| L035 | Fairview Park Boulevard (WB) | Unnamed Road | Bauhinia Road East | 700 | 86.8% | 13.2% |
| L036 | Kam Pok Road (SB) | Fairview Park Boulevard | Kam Pok Road West | 150 | 63.5% | 36.5% |
| L037 | Kam Pok Road (NB) | Kam Pok Road West | Fairview Park Boulevard | 200 | 71.4% | 28.6% |
| L038 | Yau Pok Road (SB) | Fairview Park Boulevard | Kam Pok Road West | 50 | 77.8% | 22.2% |
| L039 | Unnamed Road (SB) | Fairview Park Boulevard | Unnamed Road | 100 | 50.0% | 50.0% |
| L040 | Unnamed Road (SB) | Unnamed Road | Fairview Park Boulevard | 150 | 65.2% | 34.8% |
| L041 | Unnamed Road (NB) | Unnamed Road | Kam Pok Road West | 50 | 44.0% | 56.0% |
| L042 | Unnamed Road (NB) | Kam Pok Road West | Unnamed Road | 50 | 71.4% | 28.6% |

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus



Project Title
CONTRACT NO. SS M518 DESIGN AND CONSTRUCTION OF LIGHT PUBLIC HOUSING AT YAU POK ROAD, YUEN LONG, AT TUEN MUN AREA 3A AND AT CHOI HING ROAD, NGAU TAU KOK (DESIGN AND CONSTRUCTION STAGE)

| | | |
|--------------------|------------------------|-----------------------|
| Job No. J7319 | Figure No. TNIA/YPR | Scale in A3 N.T.S. |
| Designed by THC | Drawn by CCL | Checked by KC |
| | Revision A | Date 19 JAN 2024 |

Figure Title
LOCATION OF TRAFFIC DATA FOR TRAFFIC NOISE IMPACT ASSESSMENT (YAU POK ROAD SITE)

CKM Asia Limited

Appendix 2.2

Results of Traffic Noise Impact Assessment (Base Case Scenario)

Appendix 3.1

Site Photos of Fixed Noise Sources

Appendix 3.1 – Site Photos of Fixed Noise Sources



NS01: Chuk Yuen Stormwater Pumping Station



NS02: Open Storage Site with associated Warehouse (Fan Keung Kee)



NS02: Open Storage Site with associated Warehouse (Fan Keung Kee)



NS03: Totally Enclosed Godown



NS04: Kiddo Auto



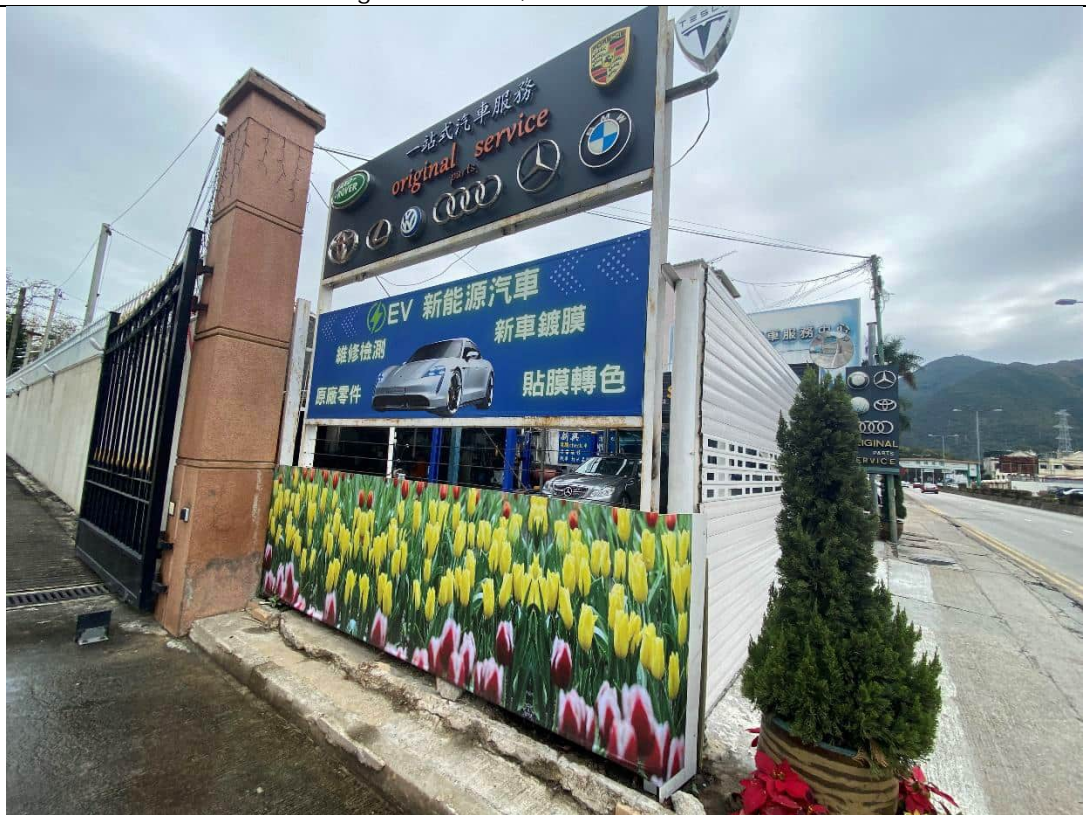
NS05: Sun Chun Car Shop



NS06: Akina Auto Centre



NS07: Chin Hung Car Service, business found to be terminated



NS08: Sun Hing Car Service



NS09: Petrol Filling Station within Fairview Park

Appendix 3.2

Prediction of Maximum Permissible Sound Power Level for the Proposed Sewage
Pumping Station

Backward Calculation of the Sound Power Level of Proposed Sewage Pumping Station (FPN1) to the nearest NSR

| NSR ID | NSR coordinate | | Noise Source | SWL, dB(A)# | Noise Source coordinate | | Horizontal distance from source to NSR, m | Distance Corr., dB(A) | Façade Corr., dB(A) | Tonal Corr., dB(A) | SPL, dB(A) |
|--------|----------------|--------|------------------------|-------------|-------------------------|--------|---|-----------------------|---------------------|--------------------|------------|
| | x | y | | | x | y | | | | | |
| NSR7 | 823270 | 837455 | FPN1 - Proposed Sewage | 80 | 823295 | 837416 | 46 | -41 | 3 | 3 | 45 |
| NSR8 | 823255 | 837382 | Pumping Station | 80 | 823295 | 837416 | 46 | -41 | 3 | 3 | 45 |
| | | | | | | | | | | Noise Criteria * | 45 |

* 24-hour operation is assumed for the Proposed Sewage Pumping Station. Hence, the more stringent nighttime noise criteria of ASR "A" is adopted.

The fixed noise impact was determined based on standard acoustic principle and practice, in formula $PNL(SPL) = SWL + C_{dist} + C_{fac} + C_{bar} + C_{char} + C_{freq}$.

In backward calculation approach, with considering the distance and façade correction, the worked out SWL should include the tonality correction, given that the actual noise information of the proposed sewage pumping station are unknown.

Appendix 3.3

Operation Phase Fixed Noise Calculations (Unmitigated Scenario)

Fixed Noise Impact Assessment at Representative NSRs (Day&Evening time)

FNSR1

| Coordinate of NSR (X) | Coordinate of NSR (Y) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) | |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|-----------|
| 823278 | 837180 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 265 | -56.5 | 0 | 0 | 3 | 40 | 9821 |
| 823278 | 837180 | NS02-2 | Loading and unloading using forklift | 823537 | 837120 | 92.5 | 265 | -56.5 | 0 | 0 | 3 | 39 | 7983 |
| 823278 | 837180 | NS02-3 | Movement of lorry | 823537 | 837120 | 102.2 | 265 | -56.5 | 0 | 0 | 3 | 49 | 74499 |
| 823278 | 837180 | NS02-4 | Movable Crane | 823537 | 837120 | 98.7 | 265 | -56.5 | 0 | 0 | 3 | 45 | 33278 |
| 823278 | 837180 | NS03-1 | Loading and unloading using forklift | 823600 | 837189 | 94.2 | 322 | -58.2 | 0 | 0 | 3 | 39 | 8006 |
| 823278 | 837180 | NS03-2 | Movement of lorry | 823600 | 837189 | 103.1 | 322 | -58.2 | 0 | 0 | 3 | 48 | 62149 |
| 823278 | 837180 | NS04-1 | Pneumatic screwdriver | 823360 | 837051 | 93.9 | 152 | -51.7 | -10 | 0 | 3 | 35 | 3340 |
| 823278 | 837180 | NS05-1 | Pneumatic screwdriver | 823373 | 837003 | 94.4 | 201 | -54.0 | -10 | 0 | 3 | 33 | 2166 |
| 823278 | 837180 | NS06-1 | Pneumatic screwdriver | 823385 | 836998 | 94.1 | 211 | -54.5 | -10 | 0 | 3 | 33 | 1820 |
| 823278 | 837180 | NS07-1 | Air compressor | 823407 | 836984 | 95.3 | 234 | -55.4 | -10 | 0 | 3 | 33 | 1958 |
| 823278 | 837180 | NS08-1 | Pneumatic screwdriver | 823441 | 837000 | 91.8 | 242 | -55.7 | -10 | 0 | 3 | 29 | 814 |
| 823278 | 837180 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 116 | -49.3 | -10 | 0 | 3 | 31 | 1318 |
| 823278 | 837180 | NS09-2 | Oil tanker at Petrol Filling Station during refilling | 823167 | 837145 | 91.1 | 116 | -49.3 | -10 | 0 | 3 | 35 | 3020 |
| 823278 | 837180 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 237 | -55.5 | 0 | 0 | 3 | 28 | 562 |
| | | | | | | | | | | | | 210734 | |
| | | | | | | | | | | | | Total | 53 |
| | | | | | | | | | | | | Criteria | 60 |
| | | | | | | | | | | | | Comply | Y |

FNSR2

| Coordinate of NSR (X) | Coordinate of NSR (Y) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) | |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|-----------|
| 823266 | 837171 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 275 | -56.8 | 0 | 0 | 3 | 40 | 9138 |
| 823266 | 837171 | NS02-2 | Loading and unloading using forklift | 823537 | 837120 | 92.5 | 275 | -56.8 | 0 | 0 | 3 | 39 | 7428 |
| 823266 | 837171 | NS02-3 | Movement of lorry | 823537 | 837120 | 102.2 | 275 | -56.8 | 0 | 0 | 3 | 48 | 69322 |
| 823266 | 837171 | NS02-4 | Movable Crane | 823537 | 837120 | 98.7 | 275 | -56.8 | 0 | 0 | 3 | 45 | 30965 |
| 823266 | 837171 | NS03-1 | Loading and unloading using forklift | 823600 | 837189 | 94.2 | 334 | -58.5 | 0 | 0 | 3 | 39 | 7442 |
| 823266 | 837171 | NS03-2 | Movement of lorry | 823600 | 837189 | 103.1 | 334 | -58.5 | 0 | 0 | 3 | 48 | 57769 |
| 823266 | 837171 | NS04-1 | Pneumatic screwdriver | 823360 | 837051 | 93.9 | 152 | -51.7 | -10 | 0 | 3 | 35 | 33404 |
| 823266 | 837171 | NS05-1 | Pneumatic screwdriver | 823373 | 837003 | 94.4 | 199 | -54.0 | -10 | 0 | 3 | 43 | 21921 |
| 823266 | 837171 | NS06-1 | Pneumatic screwdriver | 823385 | 836998 | 94.1 | 211 | -54.5 | -10 | 0 | 3 | 43 | 18309 |
| 823266 | 837171 | NS07-1 | Air compressor | 823407 | 836984 | 95.3 | 234 | -55.4 | -10 | 0 | 3 | 43 | 19577 |
| 823266 | 837171 | NS08-1 | Pneumatic screwdriver | 823441 | 837000 | 91.8 | 245 | -55.8 | 0 | 0 | 3 | 39 | 7999 |
| 823266 | 837171 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 103 | -48.2 | -10 | 0 | 3 | 32 | 1688 |
| 823266 | 837171 | NS09-2 | Oil tanker at Petrol Filling Station during refilling | 823167 | 837145 | 91.1 | 103 | -48.2 | -10 | 0 | 3 | 36 | 3866 |
| 823266 | 837171 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 246 | -55.8 | -10 | 0 | 3 | 17 | 52 |
| | | | | | | | | | | | | 288879 | |
| | | | | | | | | | | | | Total | 55 |
| | | | | | | | | | | | | Criteria | 60 |
| | | | | | | | | | | | | Comply | Y |

FNSR3

| Coordinate of NSR (X) | Coordinate of NSR (Y) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) | |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|-----------|
| 823185 | 837174 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 356 | -59.0 | -10 | 0 | 3 | 27 | 545 |
| 823185 | 837174 | NS02-2 | Loading and unloading using forklift | 823537 | 837120 | 92.5 | 356 | -59.0 | -10 | 0 | 3 | 26 | 443 |
| 823185 | 837174 | NS02-3 | Movement of lorry | 823537 | 837120 | 102.2 | 356 | -59.0 | -10 | 0 | 3 | 36 | 4137 |
| 823185 | 837174 | NS02-4 | Movable Crane | 823537 | 837120 | 98.7 | 356 | -59.0 | -10 | 0 | 3 | 33 | 1848 |
| 823185 | 837174 | NS03-1 | Loading and unloading using forklift | 823600 | 837189 | 94.2 | 416 | -60.4 | -10 | 0 | 3 | 27 | 481 |
| 823185 | 837174 | NS03-2 | Movement of lorry | 823600 | 837189 | 103.1 | 416 | -60.4 | -10 | 0 | 3 | 36 | 3734 |
| 823185 | 837174 | NS04-1 | Pneumatic screwdriver | 823360 | 837051 | 93.9 | 214 | -54.6 | -10 | 0 | 3 | 32 | 1693 |
| 823185 | 837174 | NS05-1 | Pneumatic screwdriver | 823373 | 837003 | 94.4 | 255 | -56.1 | -10 | 0 | 3 | 31 | 1343 |
| 823185 | 837174 | NS06-1 | Pneumatic screwdriver | 823385 | 836998 | 94.1 | 267 | -56.5 | -10 | 0 | 3 | 31 | 1136 |
| 823185 | 837174 | NS07-1 | Air compressor | 823407 | 836984 | 95.3 | 292 | -57.3 | -10 | 0 | 3 | 31 | 1254 |
| 823185 | 837174 | NS08-1 | Pneumatic screwdriver | 823441 | 837000 | 91.8 | 310 | -57.8 | -10 | 0 | 3 | 27 | 499 |
| 823185 | 837174 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 34 | -38.7 | 0 | 0 | 3 | 52 | 152885 |
| 823185 | 837174 | NS09-2 | Oil tanker at Petrol Filling Station during refilling | 823167 | 837145 | 91.1 | 34 | -38.7 | 0 | 0 | 3 | 55 | 350239 |
| 823185 | 837174 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 266 | -56.5 | -10 | 0 | 3 | 17 | 45 |
| | | | | | | | | | | | | 520282 | |
| | | | | | | | | | | | | Total | 57 |
| | | | | | | | | | | | | Criteria | 60 |
| | | | | | | | | | | | | Comply | Y |

FNSR4

| Coordinate of NSR (X) | Coordinate of NSR (X) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) | |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|--------|
| 823166 | 837201 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 380 | -59.6 | -10 | 0 | 3 | 27 | 480 |
| 823166 | 837201 | NS02-2 | loading and unloading using forklift | 823537 | 837120 | 92.5 | 380 | -59.6 | -10 | 0 | 3 | 26 | 390 |
| 823166 | 837201 | NS02-3 | Movement of lorry | 823537 | 837120 | 102.2 | 380 | -59.6 | -10 | 0 | 3 | 36 | 3639 |
| 823166 | 837201 | NS02-4 | Mobile Crane | 823537 | 837120 | 98.7 | 380 | -59.6 | -10 | 0 | 3 | 32 | 1625 |
| 823166 | 837201 | NS03-1 | loading and unloading using forklift | 823600 | 837189 | 94.2 | 435 | -60.8 | -10 | 0 | 3 | 26 | 440 |
| 823166 | 837201 | NS03-2 | Movement of lorry | 823600 | 837189 | 103.1 | 435 | -60.8 | -10 | 0 | 3 | 35 | 3415 |
| 823166 | 837201 | NS04-1 | Pneumatic screwdriver | 823360 | 837051 | 93.9 | 245 | -55.8 | -10 | 0 | 3 | 31 | 1292 |
| 823166 | 837201 | NS05-1 | Pneumatic screwdriver | 823373 | 837003 | 94.4 | 286 | -57.1 | -10 | 0 | 3 | 30 | 1061 |
| 823166 | 837201 | NS06-1 | Pneumatic screwdriver | 823385 | 836998 | 94.1 | 299 | -57.5 | -10 | 0 | 3 | 30 | 908 |
| 823166 | 837201 | NS07-1 | Air compressor | 823407 | 836984 | 95.3 | 324 | -58.2 | -10 | 0 | 3 | 30 | 1021 |
| 823166 | 837201 | NS08-1 | Pneumatic screwdriver | 823441 | 837000 | 91.8 | 341 | -58.6 | -10 | 0 | 3 | 26 | 413 |
| 823166 | 837201 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 55 | -42.9 | 0 | 0 | 3 | 48 | 57732 |
| 823166 | 837201 | NS09-2 | Oil tanker at Petrol Filling Station during refilling | 823167 | 837145 | 91.1 | 55 | -42.9 | 0 | 0 | 3 | 51 | 132256 |
| 823166 | 837201 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 251 | -56.0 | -10 | 0 | 3 | 17 | 50 |
| | | | | | | | | | | | Total | 53 | 204721 |
| | | | | | | | | | | | Criteria | 60 | |
| | | | | | | | | | | | Comply | Y | |

Fixed Noise Impact Assessment at Representative NSRs (Nighttime)

FNSR1

| Coordinate of NSR (X) | Coordinate of NSR (X) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|
| 823278 | 837180 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 295 | -56.5 | 0 | 0 | 3 | 40 |
| 823278 | 837180 | NS03-1 | loading and unloading using forklift | 823600 | 837189 | 94.2 | 322 | -58.2 | 0 | 0 | 3 | 39 |
| 823278 | 837180 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 116 | -49.3 | -10 | 0 | 3 | 31 |
| 823278 | 837180 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 237 | -55.5 | 0 | 0 | 3 | 28 |
| | | | | | | | | | | | Total | 43 |
| | | | | | | | | | | | Criteria | 50 |
| | | | | | | | | | | | Comply | Y |

9821
8006
1318
562
19708

FNSR2

| Coordinate of NSR (X) | Coordinate of NSR (X) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|
| 823266 | 837171 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 275 | -56.8 | 0 | 0 | 3 | 40 |
| 823266 | 837171 | NS03-1 | loading and unloading using forklift | 823600 | 837189 | 94.2 | 334 | -58.5 | 0 | 0 | 3 | 39 |
| 823266 | 837171 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 103 | -48.2 | -10 | 0 | 3 | 32 |
| 823266 | 837171 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 246 | -55.8 | -10 | 0 | 3 | 17 |
| | | | | | | | | | | | Total | 43 |
| | | | | | | | | | | | Criteria | 50 |
| | | | | | | | | | | | Comply | Y |

9138
7442
1688
52
18320

FNSR3

| Coordinate of NSR (X) | Coordinate of NSR (X) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|
| 823185 | 837174 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 356 | -59.0 | -10 | 0 | 3 | 27 |
| 823185 | 837174 | NS03-1 | loading and unloading using forklift | 823600 | 837189 | 94.2 | 416 | -60.4 | -10 | 0 | 3 | 27 |
| 823185 | 837174 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | N/A | N/A | N/A | N/A | N/A | N/A | 46 ^[1] |
| 823185 | 837174 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 266 | -56.5 | -10 | 0 | 3 | 17 |
| | | | | | | | | | | | Total | 46 |
| | | | | | | | | | | | Criteria | 50 |
| | | | | | | | | | | | Comply | Y |

545
481
39811
45
40882

FNSR4

| Coordinate of NSR (X) | Coordinate of NSR (X) | Noise Source ID | Noise Source Description | Coordinates of Noise Sources (X) | Coordinates of Noise Sources (Y) | SWL, dB(A) | Shortest Horizontal Distance from receiver to the noise source, m | Distance Correction, dB(A) | Barrier Correction, dB(A) | Tonality / Impulsiveness / Intermittency, dB(A) | Façade Correction, dB(A) | Corrected Noise Level, dB(A) |
|-----------------------|-----------------------|-----------------|--|----------------------------------|----------------------------------|------------|---|----------------------------|---------------------------|---|--------------------------|------------------------------|
| 823166 | 837201 | NS02-1 | Operating Noise | 823537 | 837120 | 93.4 | 380 | -59.6 | -10 | 0 | 3 | 27 |
| 823166 | 837201 | NS03-1 | loading and unloading using forklift | 823600 | 837189 | 94.2 | 435 | -60.8 | -10 | 0 | 3 | 26 |
| 823166 | 837201 | NS09-1 | Movement of heavy vehicle within Petrol Filling Station (one entering and one leaving the station) | 823167 | 837145 | 87.5 | 55 | -42.9 | 0 | 0 | 3 | 48 |
| 823166 | 837201 | FPN1 | Proposed Sewage Pumping Station within Project Site | 823295 | 837416 | 80.0 | 251 | -56.0 | -10 | 0 | 3 | 17 |
| | | | | | | | | | | | Total | 48 |
| | | | | | | | | | | | Criteria | 50 |
| | | | | | | | | | | | Comply | Y |

480
440
57732
50
58701

[1]: Experienced noise level based on on-site noise measurement at FNSR3. Data and photo records are provided as Appendix 3.4.

Appendix 3.4

Data and Photo Record of Petrol Filling Station within Fairview Park Noise
Measurement

| | | | FNSR3 | |
|----------------------------|----------------------------|----------------------------|--------------------------------|--|
| | | | $L_{eq(30mins)}$, dB(A) | No. of Vehicles entering the Filling Station |
| 26-Jun | 23:00 to 23:30 | From Petrol Refilling | 51.4 | 1 (no heavy vehicles) |
| | | Background | 51.3 | |
| | | Background Corrected Leq | 41.4 | |
| | | Leq With Façade Correction | 44.4 | |
| | 23:30 to 00:00 | From Petrol Refilling | 49.9 | 3 (no heavy vehicles) |
| | | Background | 51.0 | |
| | | Background Corrected Leq | 39.9 | |
| | | Leq With Façade Correction | 42.9 | |
| 27-Jun | 00:00 to 00:30 | From Petrol Refilling | 49.0 | 3 (no heavy vehicles) |
| | | Background | 49.8 | |
| | | Background Corrected Leq | 39.0 | |
| | | Leq With Façade Correction | 42.0 | |
| | 00:30 to 01:00 | From Petrol Refilling | 48.4 | 1 (no heavy vehicles) |
| | | Background | 48.9 | |
| | | Background Corrected Leq | 38.4 | |
| | | Leq With Façade Correction | 41.4 | |
| | 05:00 to 05:30 | From Petrol Refilling | | 0 |
| | | Background | 59.0 | |
| | | Background Corrected Leq | N/A | |
| | | Leq With Façade Correction | N/A | |
| | 05:30 to 06:00 | From Petrol Refilling | | 0 |
| | | Background | 54.4 | |
| | | Background Corrected Leq | N/A | |
| | | Leq With Façade Correction | N/A | |
| | 06:00 to 06:30 | From Petrol Refilling | 52.8 | 3 (heavy vehicles included) |
| | | Background | 54.5 | |
| Background Corrected Leq | | 42.8 | | |
| Leq With Façade Correction | | 45.8 | | |
| 06:30 to 07:00 | From Petrol Refilling | 46.9 | 4 (heavy vehicles included) | |
| | Background | 53.6 | | |
| | Background Corrected Leq | 36.9 | | |
| | Leq With Façade Correction | 39.9 | | |

Maximum Leq 45.8

Minimum Leq 39.9

Note: The background noise level between 05:00 and 05:30 was significantly higher than the other time periods due to the unloading activities from trucks outside the petrol filling station

Site Photo Record



Noise measurement conducted from 26 June 2023 11pm to 27 June 2023 1am.



Noise measurement conducted from 5am to 7am on 27 June 2023.

Appendix 3.5

Details of Background Noise Measurement for Fixed Noise Impact Assessment

| | |
|------------------------|---|
| Measurement Purpose: | Prevailing Noise Levels for Fixed Noise Impact Assessment |
| Measurement Date: | 10 th August 2024 – 11 th August 2024 |
| Measurement Time: | Night time (23:00 – 07:00); Daytime (07:00 – 19:00); Evening time (19:00 – 23:00) |
| Measurement Location: | Zone 2 of Application Site, near southern site boundary |
| Measurement Parameter: | Sound Pressure Level (SPL) (A-weighted in dB(A)) |
| Weather: | Sunny, ~32°C, wind speed ~1m/s |
| Measured by: | Gary Yuen, Ramboll Hong Kong Limited |
| Instrument: | Norsonic Sound Level Meter Nor139, Norsonic Calibrator Nor1256 |
| Field observation: | Ambient noise mainly from road traffic noise along Yau Pok Road, Kam Pok Road and Fairview Park Boulevard |
| Photo Records: | |